

# COMMERCIAL CAR JOURNAL

with which is combined Operation & Maintenance

Reg. U. S. Pat. Off.

Acceptance under the Act of June 5, 1934, authorized December 18, 1934.  
Published monthly.  
Member C.C.A.

Vol. LIX

Philadelphia, June, 1940

No. 4

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**SUBSCRIPTION RATES:** United States and United States Possessions and all Latin-American countries—\$3.00 per year. Canada and Foreign—\$4.00 per year. Single copies—40 cents.

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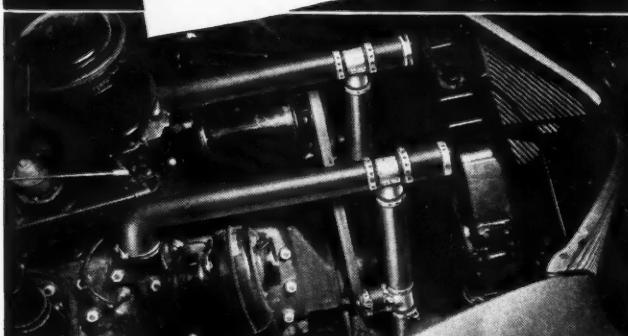
COMMERCIAL CAR JOURNAL, Vol. LIX, No. 4. Published monthly by Chilton Co., N. W. Cor. Chestnut & 56th Sts., Philadelphia, Pa. Subscription price: United States and Possessions, Mexico and Latin American Countries, \$3.00 per year; Canada and Foreign, \$4.00 per year. Single copies, 40¢, except April Issue, \$1.00. Acceptance under the Act of June 5, 1934, authorized December 18, 1934.



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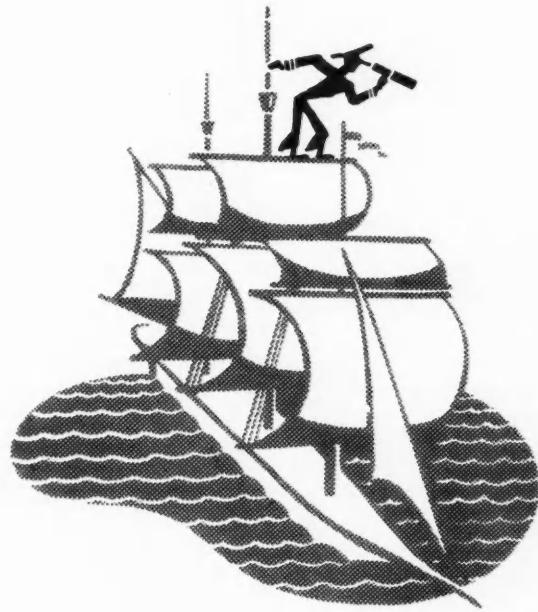
COMMERCIAL CAR JOURNAL  
JUNE, 1940

# COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR FLEET OPERATORS

**W**ITH the motor trucking industry standing by as an interested spectator, the House of Representatives sent the Wheeler-Lea omnibus transportation bill (S.2009) to the lethal chamber on May 9. It was an eleventh-hour death sentence as an unexpected climax to a series of serio-comic tactics that were unusual even in the strange political annals of legislative gyrations. While the sentence was pronounced by the solons, it was ordered by six railroad brotherhoods. Teaming up with waterway and farm organizations they threw the balance of power against the bill just as it was on the eve of being enacted into law after two years of nervous, sweating labor by its Congressional sponsors. By their policy of appeasing first one group, then another they had pushed it through both branches of Congress, and reached agreement in conference only to see their work dashed to pieces when the House, already concerned over waterway and farm opposition, was faced with belated protests from the six railroad brotherhoods. That turned the trick. The House by a 209 to 182 vote, recommitted the measure. While some proponents of the bill affect the belief that it might yet be passed at the present session, others concede that there is no such prospect.

Representative Lea, chairman of the House Committee on Interstate and Foreign Commerce, has indicated he will not attempt to bring the measure up again at the present session of Congress and Senator Wheeler, chairman of the Senate Interstate Commerce Committee, has made it clear he will make no move for Senate action. This outlook, it is maintained, would not be changed even if the war situation prolonged the present session of Congress. There is even doubt that an omnibus bill in any form can be passed at a future session of Congress. Those holding this view claim that further transportation legislation will have to be done piece-meal. The



## LEGISLATIVE LOOKOUT

### Congress sends S.2009 to death chamber after railroad brotherhoods shift allegiance

advantage of this procedure, it is contended, will be the avoidance of conflicting groups whose activities so harassed and finally brought to defeat the omnibus bill, the creature of President Roosevelt's railroad management-labor committee of six.

One of the members of this committee, D. B. Robertson, president of the Brotherhood of Locomotive Firemen and Enginemen, alined his organization with five other brotherhoods in launching the drive against

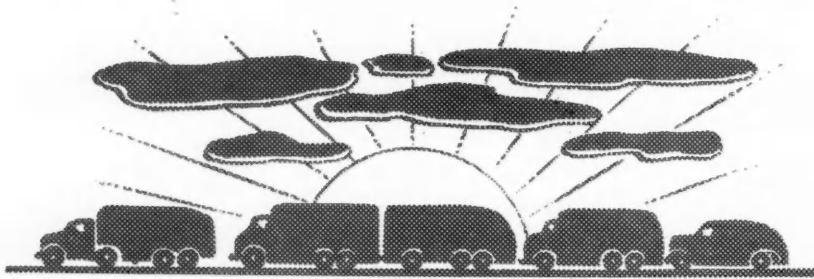
the bill just as it was about to be given the green light. The other brotherhoods that turned against the bill on the pretext that it deprived labor of protection were the engineers, conductors, trainmen, switchmen and telegraphers, the last named joining the operating brotherhoods after the first attack on the bill was made.

Breaking with their fellow-organizations a number of service brotherhoods launched an ineffective drive

(TURN TO PAGE 84, PLEASE)

# AFTER HOURS

**Editorial Comments By George T. Hook, Editor**



## A discussion of the Pennsylvania Turnpike toll road and of some of the claims made regarding it

**T**Oll-charging superhighways, as one legislator pointed out in giving his reason for opposing extension of the toll-road now being constructed in Pennsylvania, represent a "bad way of doing a good thing."

And as Governor Lehman, of New York, stated in vetoing a toll bill, "It is an unsound practice to impose tolls on roads and parkways. Were I to sign this bill I feel that it would create a precedent which would open up the way to the passage of legislation authorizing the imposition of tolls on highways and parkways throughout the state. Both from a state and national point of view we cannot afford to retrogress to conditions prevailing in this country a century ago."

And in reporting to Congress on the subject of "Toll Roads and Free Roads," the Bureau of Public Roads said: "The factual evidence presented in this report clearly indicates that the construction of direct toll highways cannot be relied upon as the sound solution of the problem of

providing adequate facilities for the vitally necessary highway transportation of the United States, or to solve any considerable part of this problem."

Those three statements should be echoed by the truck industry in its entirety in opposing toll roads in principle.

Elsewhere in this issue there is an article about the 160-mile, toll-charging superhighway now being built in Pennsylvania. Private capital could not see the toll road as a good investment and refused to finance it. So the Federal Government stepped in and took care of the financing with an outright grant from the PWA and a loan from the Reconstruction Finance Corp. The Government, in other words, provided the money. But the Government itself does not seem to consider that it made a gilt-edge investment because the toll-road bonds are not eligible for investment by national banks or other members of the Federal Reserve System.

There is doubt in many minds that

the Pennsylvania Turnpike will be a financial success. Revenue estimates drawn up by consulting engineers show that trucks are expected to contribute heavily. In the first year trucks are expected to comprise 22.3 per cent of the vehicles using the toll road and to pay 51.67 per cent of the tolls. The expectation is that 290,000 trucks will pay \$1,380,000 in tolls the first year, and that in the tenth year 524,000 trucks will pay \$2,489,000.

There are definite indications that truck operators consider too high the toll charges for various types of trucks on which the revenue estimates are based. In taking this position the truck operators are quite properly discounting the monetary savings which the consulting engineers claim for the toll road over certain other existing routes. Those theoretical savings are based upon savings in time, an expected reduction in maintenance costs and fuel savings due to reduction in grades and in mileage traveled. The saving of time is, of course, no economy to the operator if he cannot use that time to advantage. Reduced maintenance costs are entirely problematical because the vehicles will be operating over the Turnpike at higher speeds. The saving in fuel over the existing Routes 22 and 30 is negligible.

Literature dealing with the Pennsylvania Turnpike stresses the important fact that grades on the toll road will not exceed 3 per cent up and 4 per cent down. Bearing in mind that the maximum continuous up-grade is 8 per cent on the William Penn Highway Route 22 and 9 per cent on the Lincoln Highway Route 30, the lower Turnpike grades would suggest a possible saving in initial vehicle investment. This possibility is washed out by the practical fact that the kind of vehicle necessary in an operation will be de-

## CCJ QUIZ

Check and double check . . . and you have to double check if you want to be checked off with a correct answer. Otherwise, you'll just be checked up. In every question, check one of the alternatives in each bracket, so that the result will be a true and correct statement. Give yourself ten for each problem solved, and see if you can't check in with a hundred.

(Correct Answers on Page 112)

1. The (a. Patman-Horner Bill, b. Norton Bill) provides for the regulation of the automotive dealer trade by the (c. Federal Trade Commission, d. Interstate Commerce Commission).

2. Until (a. 1911, b. 1922) the Autocar Company manufactured (c. taxicabs, d. bicycles) as well as trucks.

3. The American Automobile Association estimates that the diversion of motor vehicle revenues for other than highway pur-

terminated by the off-the-Turnpike use to which it is put. A vehicle purchased for the 3 per cent grades on the Turnpike would sacrifice almost all of the time savings of the Turnpike in winching itself over the steep hills between the western terminus of the Turnpike and Pittsburgh. Interstate operations cannot be based solely upon Turnpike conditions, nor can intrastate operations. Consequently, investment savings are highly problematical.

Turnpike literature also emphasizes the savings in vertical climb over Route 30. This saving is estimated to be 10,000 ft. over Route 30. A study made by COMMERCIAL CAR JOURNAL indicates that the saving is more in the neighborhood of 7000 ft. The vertical climb on the Turnpike from Middlesex to Irwin is 6872 ft. From Irwin to Pittsburgh the vertical climb is 1535 ft. Therefore, using the Turnpike from Harrisburg to Pittsburgh results in a total vertical climb of 8407 ft. This is to be compared with a total climb of approximately 15,600 ft. on the Lincoln Highway Route 30. The saving on the Turnpike route is, thus, 7193 ft.

It may be significant to operators that publicized comparisons deal more with Route 30 than with Route 22, the William Penn Highway. This may be due to the natural tendency to put the best foot forward. There is no other explanation because the comparisons are not so favorable to the Turnpike. However, the Turnpike Commission cannot ignore these comparisons—as truck operators certainly will not—because in the final analysis Route 22 is the Turnpike's No. 1 competitor and the toll charges must be based upon the advantages which the Turnpike has over Route 22, and not upon the advantages over Route 30.

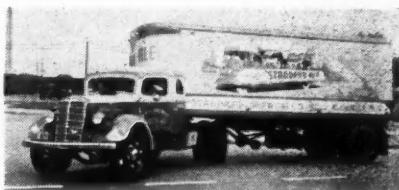
The William Penn Highway Route 22 is the route now preferred by truck operators because it is less mountainous than Route 30. According to COMMERCIAL CAR JOURNAL's study the vertical climb on Route 22 from Harrisburg to Pittsburgh is only 8407 ft. This is just 2743 ft. more than the vertical climb via the Turnpike. It is 7000 ft. less than the climb on Route 30.

The monetary savings estimated by the engineers for the Turnpike over Route 22 are considerably less than those over Route 30, and, actually, in a number of cases there is a small net loss to the truck operator after the payment of tolls. In spite of this fact, however, the engineering estimates show that the Turnpike is expected to attract more trucks from Route 22 than from Route 30.

Truck operators in general are far too practical to be swayed by mere statements. The purpose of our discussion is merely to stimulate the exercise of that practical characteristic on some of the statements being circulated in behalf of the Pennsylvania toll road. For their own good, all truck operators must be against toll roads in principle and must vigorously oppose all toll road proposals. At the same time it would be too much to expect truck operators to ignore a toll road placed in their path by an extravagant government if, after the payment of tolls, that road resulted in a net operating profit over the use of free routes. But operators must decide for themselves whether there is a net saving and the exact amount saved. If that saving is considerable it would be folly not to use the toll road. However, if the saving is relatively small the operator must decide for himself the wisdom of withholding his patronage from the toll road and of sacrificing that small saving as a protest against the principle of toll roads.



The recent addition of 12 new General Motors trucks makes Universal Pictures' current fleet the largest in the studio's history, according to Carl Peringer, superintendent of transportation. Each of the new trucks is painted in two-tone brown, and larger units provide space for changeable advertising placards. Kept constantly busy on location, fleet occasionally appears in movies.



Working for Standard Brewing Co., Rochester, N.Y., this handsome new Mack tractor-trailer unit carries Ox Head Old Ale as far as Wheeling, W. Va. The highly colorful painted scene depicts a famous team of oxen.



The Ford sedan delivery, adhering closely to deluxe passenger car lines, appears at home in swank Pasadena residential section.

#### Note to Quizzers

COMMERCIAL CAR JOURNAL still has a dollar bill ready for the contributor of each quiz question . . . 10 bucks for a complete column. One veteran contributor even writes his own quiz introduction. Address all entries to the Editor.

World War, was designed by (c. Dodge Brothers, d. Packard Motor Company).

9. (a. Alcohol, b. Propane) is used both as a refrigerant and as the (c. anti-freeze, d. engine fuel) on self-contained refrigerating systems on motor trucks.

10. Oil reserves lying beneath the sea are being tapped by (a. drilling wells in a curved line, b. a submarine oil well) an invention of (c. Upton Close, d. H. John Eastman).

poses has amounted to approximately (a. twenty million dollars, b. one billion dollars) in the past (c. ten years, d. twenty years).

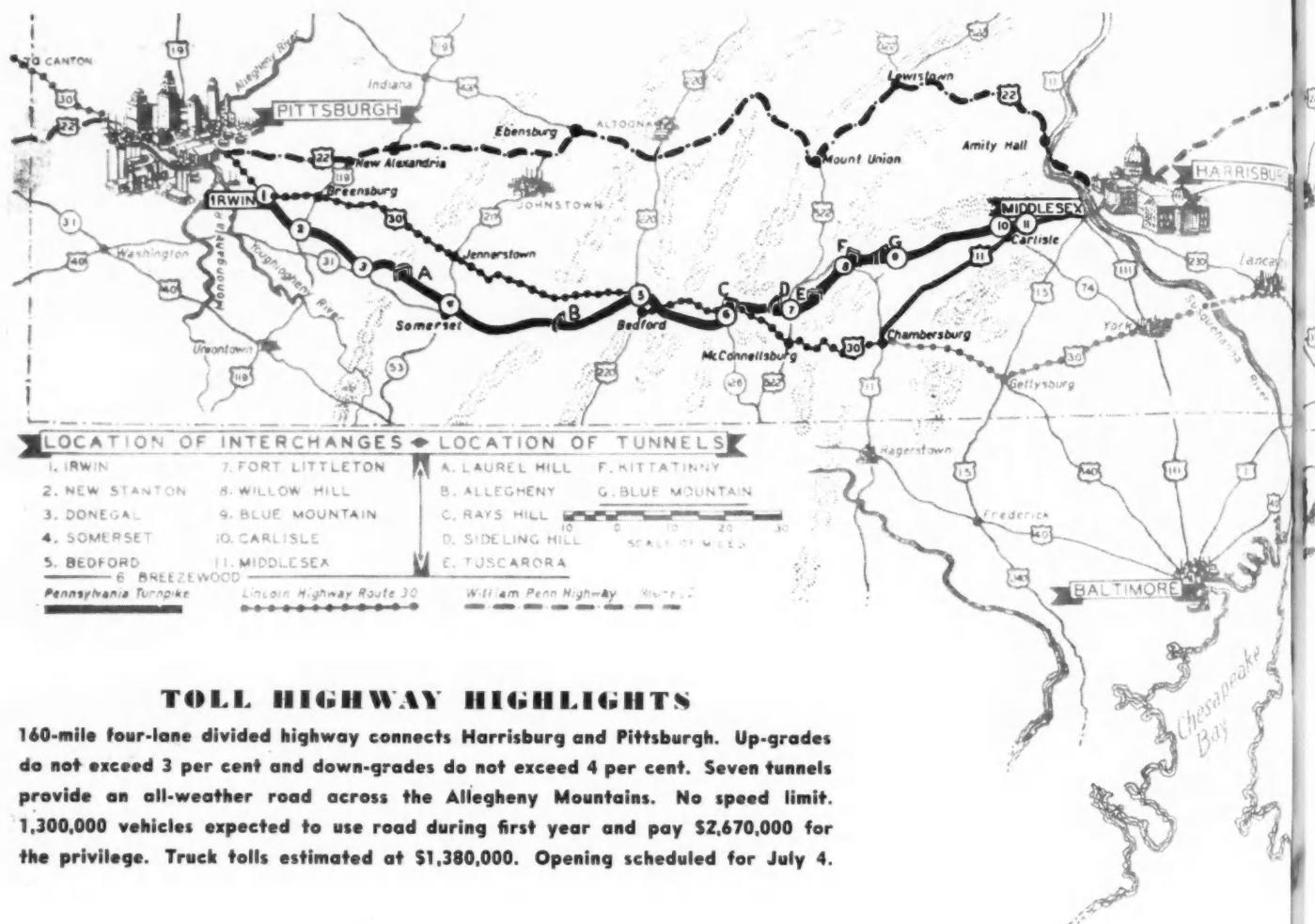
4. (a. Ford Motor Co., b. General Motors) is incorporated under the laws of (c. Pennsylvania, d. Delaware).

5. In 1918 (a. Diamond T, b. White) discontinued the manufacture of passenger cars, while (c. Packard, d. Pierce Arrow) resigned from the truck field.

6. A new type of automotive brake lining, substituting asbestos with (a. aluminum metal wool, b. vanadium steel) has been developed in (c. Soviet Russia, d. Germany).

7. Alfred P. Sloan, Jr., was elected (a. President, b. Executive Vice President) of General Motors in (c. 1920, d. 1930).

8. The (a. Liberty, b. Victory) Motor, standard American war engine in the first



### TOLL HIGHWAY HIGHLIGHTS

160-mile four-lane divided highway connects Harrisburg and Pittsburgh. Up-grades do not exceed 3 per cent and down-grades do not exceed 4 per cent. Seven tunnels provide an all-weather road across the Allegheny Mountains. No speed limit. 1,300,000 vehicles expected to use road during first year and pay \$2,670,000 for the privilege. Truck tolls estimated at \$1,380,000. Opening scheduled for July 4.



**Presenting the Pennsylvania Turnpike, 70 million dollars' worth of 4-lane, toll-charging superhighway**

By **GEORGE T. HOOK**  
Editor, Commercial Car Journal

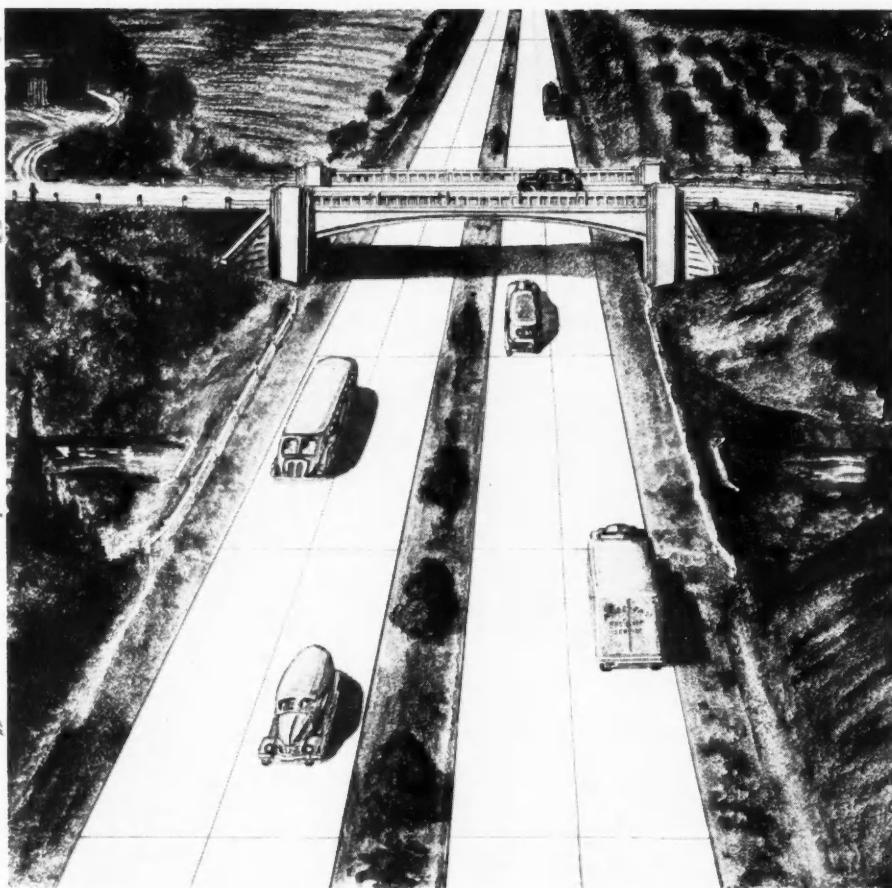
# TOLLS,



ON the Fourth of July, if plans work out according to schedule, the President of the United States, flanked by all sorts of lesser dignitaries, will snip a symbolic ribbon and open for the use of motor vehicles the Pennsylvania Turnpike, 160.8 miles of super, toll-charging highway.

From that day on, according to official estimates, motor trucks will be expected to comprise 22.3 per cent of the vehicles that use the Turnpike, and to pay 51.67 per cent of the tolls to make the financial portion of "The Dream Highway" come true.

In its physical aspects "The Dream Highway" is a magnificent dream which was realized with the help of an outright grant of \$29,250,000 by



**Artist's conception of the unobstructed four-lane highway. 110 of its 160 miles are in a straight line. Map shows comparisons with alternate Routes 22 and 30.**

# PLEASE!

the Federal Public Works Administration and the purchase of \$40,800,000 worth of Pennsylvania Turnpike Commission bonds by the Reconstruction Finance Corporation. The State of Pennsylvania has no financial stake in the matter. Its 1937 General Assembly merely created the plan and legalized the formation of the Turnpike Commission to work it out. The Commonwealth itself does not participate in any form of guarantee, nor is its credit back of the bonds. The Commonwealth stands to lose nothing, and to gain all, because when the bonds are paid off the Turnpike becomes the property of the State and, by the terms of the enabling Act, a free highway.

The bonds are dated for 30 years,

but traffic engineers consulted by the Turnpike Commission believe that toll-paying traffic will be sufficient to pay off the bonds in a much shorter period. The anticipated pay-off date, "based on most conservative estimates," falls somewhere in the period 1956 to 1957.

Traffic engineers consulted by the Pennsylvania Turnpike Commission estimate that 1,300,000 vehicles will use the super-highway the first year, and that traffic will increase to 2,350,000 vehicles in the tenth year. In the first year, trucks are expected to constitute 290,000 of the total and in the tenth year, 524,000 of the total.

These same engineers estimate that total receipts will be \$2,670,000 in

the first year, of which trucks will provide \$1,380,000; and \$4,832,000 in the tenth year, of which trucks will provide \$2,490,000.

Toll charges, on which these receipts are based, are as follows:

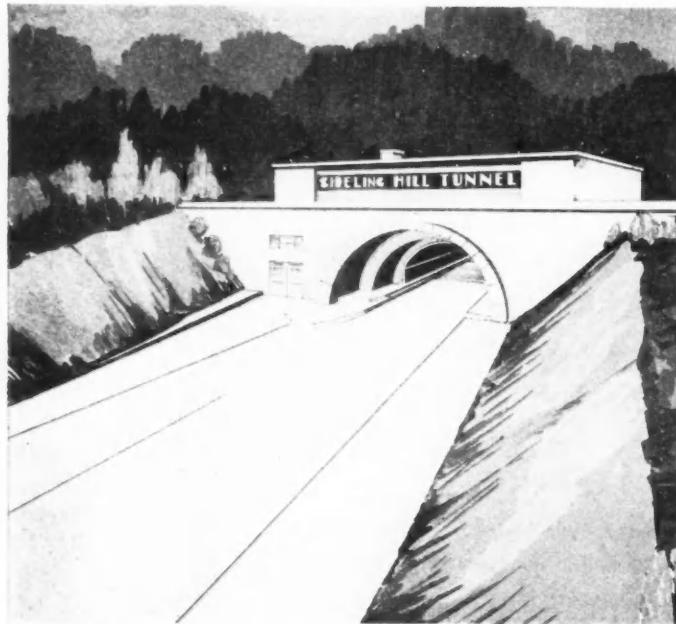
Type of Vehicle	Gross Weight	One-Way Thru-Toll
Heavy Trucks		
Full Trailer	.... up to 62,000 lb.	\$10.00
Semi-Trailer	.... up to 39,000 lb.	7.50
Semi-Trailer	.... up to 30,000 lb.	6.00
Truck	.... up to 26,000 lb.	5.00
Truck	.... up to 22,000 lb.	4.50
Truck	.... up to 18,000 lb.	4.00
Medium Trucks	.... up to 13,000 lb.	3.00
Light Trucks	.... up to 7,000 lb.	2.00
Light Trucks	.... up to 5,000 lb.	1.50
Buses		4.00
Passenger Cars		1.50
Passenger Cars	Round Trip	\$2.00

In their estimates of receipts the traffic engineers naturally included local use of fractional parts of the

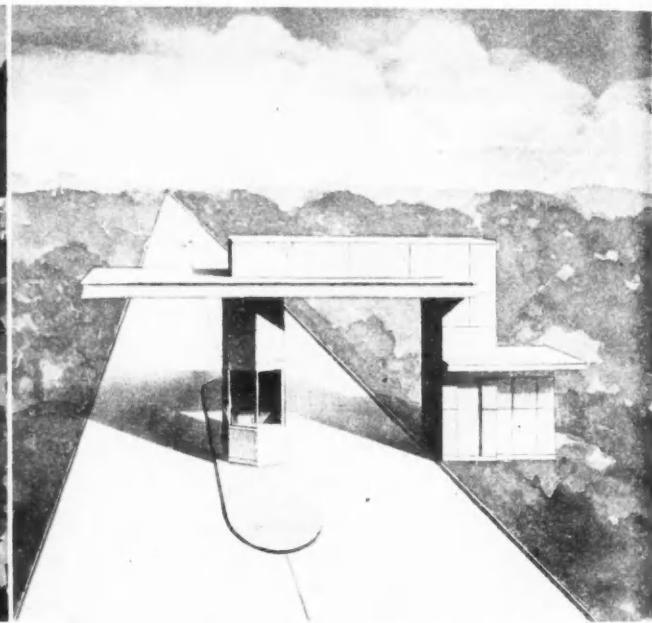
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# TOLLS, PLEASE!



**Entrance to one of the seven tunnels started by the old railroad company and finished by the Turnpike Commission**



**Simply-designed but efficient toll gates, located at each interchange, check vehicles on and off the dream road**

(CONTINUED FROM PAGE 21)  
highway. In such cases they used an average toll charge of 4 cents per mile for Heavy Trucks; 2 cents per mile for Medium Trucks; 1 cent per mile for Light Trucks; 1 cent per mile for Passenger Cars.

The traffic engineers did not include round-trip rates in any of the truck classifications because, as they put it, "the one-way charges are well within the carefully estimated dollar-saving a truck should show by this route in comparison with the trip over the mountains." It is understood, however, that the matter of round trip rates for trucks and the issuance of books of tickets at special rates for trucks making frequent use of the highway, is being studied by the Turnpike Commission.

In justification of these toll charges the traffic engineers cited the follow-

ing advantages to trucks which, they said, "were confirmed by truck operators in interviews with our representatives":

"1. Ability to operate with safety at higher speeds in all kinds of weather.

"2. Reduced fuel cost.

"3. Reduced tire cost (because of lower grades and reduced braking effort).

"4. Reduced maintenance cost (because of lower grades and reduced curves, with resulting lessening of strain on transmission, brakes and engine).

"5. Utilization of lower-powered trucks for the same payload and of increased payload for present size of unit.

"6. Saving of time on the Pittsburgh-New York run to the extent of making deliveries possible, in some

cases, one business day earlier than with the present routes.

"7. Possible savings in drivers' wages; directly in shorter running time and indirectly in possible reduction or elimination of lay-over time.

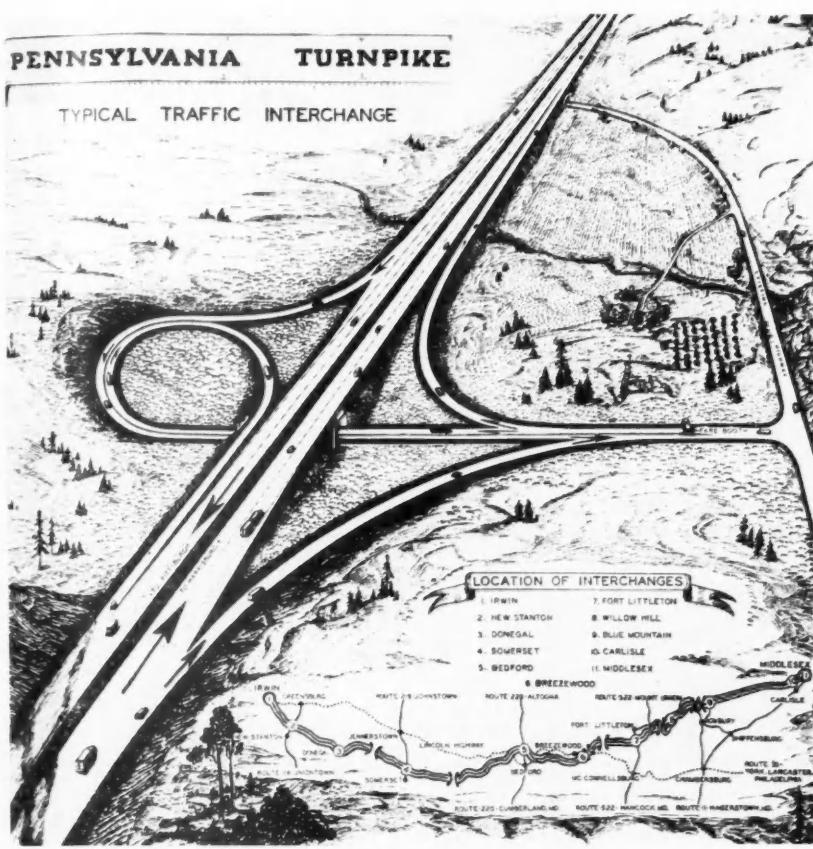
"8. Eliminating helper on truck who is now required on trips through the mountains during snowy and icy weather.

"9. Reduction of accidents, with corresponding saving in insurance rates.

"10. Interchangeability of fleet units because of elimination of need of special units for the Pennsylvania run through the mountains."

The above advantages are claimed for the Turnpike over Route 22 and also over a combination of Routes 30 and 11, which are now used between Harrisburg and Pittsburgh.

From the city line of Harrisburg



A modified clover leaf at each interchange handles "on and off" traffic without interrupting through traffic. Note toll gate at extreme right

to the city line of Pittsburgh the mileage of these routes is as follows:

Route 22 (William Penn Highway), 207 miles;

Route 30 (Lincoln Highway) plus Route 11 (Chambersburg to Harrisburg), 193 miles;

Turnpike, plus Route 30 (Irwin to Pittsburgh) and Route 11 (Middlesex to Harrisburg), 188.8 miles.

The above figures were supplied to COMMERCIAL CAR JOURNAL by the Pennsylvania Turnpike Commission. According to the figures, the Turnpike saves 18 miles over the William Penn Highway and only 4 miles over the Lincoln Highway route.

However, in the case of the Lincoln Highway route there is claimed for the Turnpike an additional saving of 10,000 feet of vertical climb.

Time savings in favor of the Turnpike, computed by the engineers from

graphic diagrams, are 2 hours over Route 22, and 6 hours over 30. The time savings are attributed to ability to maintain a higher rate of speed, because of reduced gradients and curves, the avoidance of towns and the elimination of traffic intersections.

The engineers (with the help of profiles and corresponding tractive and braking effort diagrams) have translated the advantages of the Turnpike over Routes 22 and 30 into monetary savings. Below are the savings claimed for vehicles of various gross weights. It should be remembered that these savings are before the payment of tolls. In other words, to arrive at the net saving the toll charge should be deducted.

Gross Weight	Savings Route 30	Savings Route 22	Turn- pike Toll
26,000 lb.	\$12.13	\$5.09	\$5.00
39,000 lb.	17.69	7.48	7.50
52,000 lb.	23.25	9.87	10.00
62,000 lb.	27.60	11.58	10.00

Those monetary savings are for Eastbound traffic. The net monetary savings over Route 30 are considerable; over Route 22 there is a net loss in two cases and a net saving of 9 cents and \$1.58 in the other two cases.

For Westbound traffic the monetary savings are practically identical with the Eastbound movement, the engineers state, in the case of Route 30, and 10 per cent higher for Route 22.

There is also claimed a saving of 145 miles between Chicago and New York if the Turnpike Route is used in preference to Route 20, which runs through Toledo, Cleveland, Erie, Buffalo and Albany and down along the Hudson to New York. The engineers express the matter this way:

"The cost per mile for medium and heavy truck operation, we find, lies between 12 and 18 cents, according to the type and weight of the truck. The saving of 145 miles between New York and Chicago would amount to from 17 to 26 dollars for a one-way trip."

The saving, of course, is before the payment of tolls.

Neither the tolls to be charged, nor the method of assessing them against types of vehicles, nor the mechanics of paying tolls had been officially established as late as May 20. The Turnpike Commission recognized the toll problem as being of prime importance and was giving it very careful study. Realizing that trucks would have to be weighed or the operator's word would have to be taken for the gross weight, the Commission was considering basing truck tolls on tire sizes. There was a realization also that a truck traveling empty should pay a lower toll than a truck traveling loaded. Furthermore, that some form of discount should be given trucks that make round-trips and trucks that use the road frequently.

While the mechanics of paying toll were not settled, it was expected that the vehicle driver would be given a ticket which identified the interchange at which he entered the Turnpike. This ticket would be surrendered at the interchange where he left the Turnpike, the distance traveled would be computed, and the driver would pay the toll established for that distance for the type of vehicle he was driving.

(TURN TO PAGE 76, PLEASE)



WHEN a fleet has been operated as economically and as safely as the Bloomingdale's fleet in New York City, further improvement might seem to call for a stroke of genius. Operating costs of 5 cents a mile for trucks ranging from 1½ to 4 tons are pretty close to the minimum, and a fleet that carries off safety awards cannot easily cut down on accidents. By making inspectors of its drivers, Bloomingdale's has shown that it is possible to do both.

One of New York's larger department stores, Bloomingdale's operates a fleet of 31 vehicles, mostly Diamond T's and Internationals. Seven shuttle heavy goods back and forth between the store in Manhattan and the warehouse in Long Island City, while 22 of them deliver furniture to the city and suburbs. As with most stores in New York, parcel deliveries are handled by an outside service.

For years, the store has kept a close check on its fleet costs and searched constantly for ways to reduce them. One of the first points of attack was the accident rate, which was sound strategy in view of the Greater New York Safety Council's estimate that the average commercial-vehicle accident in the greater city costs \$105. Last year, the store's tow truck was retired from service and the accident rate was so low that Bloomingdale's fleet looks like the winner in the department-store division of the city inter-fleet safety competition.

Costs were progressively reduced by introducing forms that permitted the store to detect quickly any undue variation in the costs of particular vehicles. Such records made it easy to compare one month's costs with another for any truck, and to determine whether one truck of given



#### DRIVERS VEHICLE REPORT

Truck No. ....	<input type="checkbox"/>
If No Defects, Check Here <input type="checkbox"/>	
Check defects and explain under "Remarks"	
Steering gear .....	<input type="checkbox"/>
Foot brake .....	<input type="checkbox"/>
Emergency brakes .....	<input type="checkbox"/>
Tires .....	<input type="checkbox"/>
Rear view mirror .....	<input type="checkbox"/>
Windshield wiper .....	<input type="checkbox"/>
Horn .....	<input type="checkbox"/>
Lights .....	<input type="checkbox"/>
Reflectors .....	<input type="checkbox"/>
Drive shaft .....	<input type="checkbox"/>
Generator charging .....	<input type="checkbox"/>
Generator not charging .....	<input type="checkbox"/>
Oil pressure .....	<input type="checkbox"/>
Remarks: .....	
Repaired By .....	
Date .....	

YOU ARE HELD RESPONSIBLE FOR

## CUTTING

make and capacity was being operated as economically as another. Declining costs proved the soundness of this close supervision, but there were a couple of problems it did not solve. Trucks did fail on the road occasionally, the need of major repairs did recur, and these repairs often threw the shop off its routine stride.

Obviously, major jobs were necessary only because small defects were not being caught in time. Two courses seemed possible. One was to give each truck a thorough going-over at intervals. Since the regular weekly

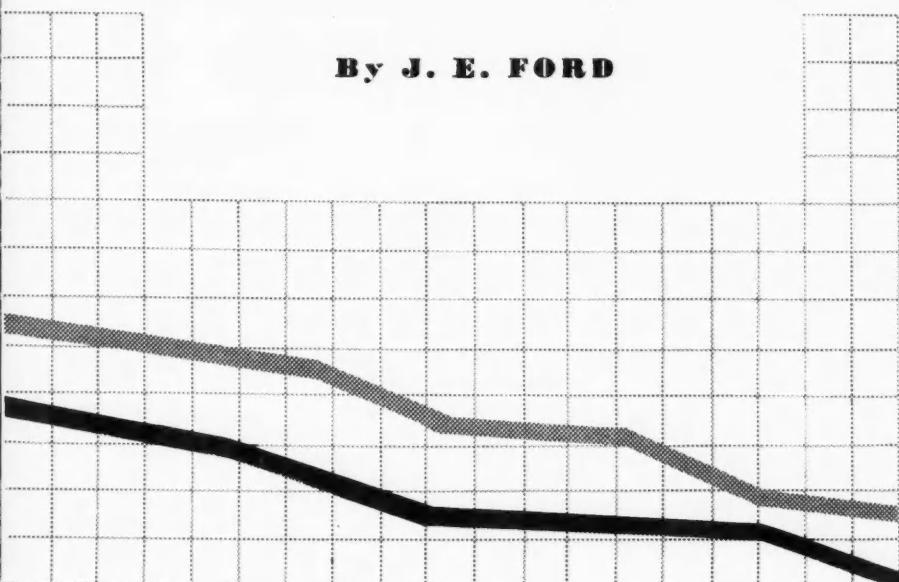
inspections of brakes, steering, and headlights, and the periodic tune-ups and minor repairs were already keeping two mechanics and the foreman busy, more thorough inspections would have required more men. The other possibility was to make the drivers responsible for detecting the smaller defects as soon as they developed. The latter plan was adopted.

A column was added to the nightly sign-off sheet, on which the driver reported the odometer reading and the gas and oil consumption for the day. In the new column, the driver was expected to describe any short-



**Bloomingdale's made drivers responsible for their vehicles, took weekly driver reports seriously and carved additional maintenance savings from an already efficient fleet record**

**By J. E. FORD**



## G LOW COSTS LOWER

comings noted in his truck that day. The result was a delusion. Every so often a truck that had been running perfectly, according to the daily reports, quit on the road or limped home. The catch was that, when it came time to check out at night, the drivers had so many other things on their minds they could not be bothered with composing a report on the condition of their vehicles.

Three months ago, S. R. Goldman, service building manager, and in that capacity responsible for the operation and maintenance of the Bloomingdale's fleet, took a different tack.

He substituted weekly reports for the daily one, and, instead of asking the driver to write his own, supplied mimeographed report forms that listed virtually every point on the vehicle at which trouble could develop. All the driver had to do to indicate sub-standard performance was to check the proper space. A few blank lines were provided for details if he wished to add them.

Most important, however, was the warning carried on every report sheet: "You are held responsible for the condition of your vehicle." Responsibility for major repairs was

definitely shifted from shop to driver.

The effect was immediate and surprising. Drivers who had gone weeks or even months without noticing anything amiss began to report every type of trouble, sometimes trifling, sometimes serious. Realizing any later mishap or important repairs might be traced to their neglect to report trouble while it was still trivial, drivers became eager to report everything. The ease with which the report forms could be filled out encouraged them.

For the first month, there was no  
(TURN TO NEXT PAGE, PLEASE)

**LOW COSTS (Continued from page 25)**

saving on operating cost. On the contrary, repair expense shot upward. The increase, however, was more apparent than real, for the additional repairs represented an accumulation of jobs that had been overlooked. Further, the nature of some repairs made them stitches in time; the nine will inevitably be saved.

One driver, for example, reported a strange underside noise. Investigation disclosed that four bolts were loose in the transmission flange and three were missing entirely. It does not take much imagination to tell what could have happened if the noise had gone unreported. Another driver reported simply that his seat cushion was uncomfortable. Mechanics found a broken spring. If the broken end had been allowed to work through the cover, as it no doubt would have done, it could have caused not only an embarrassing injury but, occurring at the right moment, a collision.

The statement "Need grease on steering" led mechanics to the discovery that one truck was heading straight for a crack-up. The hard steering was caused not by improper lubrication but by two broken springs in the drag link. Another driver, reporting that his whole truck vibrated, drew attention to a bent driveshaft.

Elimination of these defects cost money that would not have been spent if the weekly reports had not been introduced, but they saved future repairs to an extent that can only be guessed at. Besides, the up-swing in repair costs was only temporary. In the first month, trouble that had been accumulating was cleaned up. Since then, only current failures have had to be remedied.

In another direction, the weekly reports have been a distinct benefit. Peaks in the volume of shop work have been smoothed out and the average length of time for laying up a truck has been reduced.

Previously, the regular weekly inspection of the safety features was begun by the night man Saturday night, continued Sunday night, and completed by the day men on Monday when all delivery trucks are idle. All other maintenance and repair work was done as the need arose, or rather as it could be handled. Consequently, jams were not infre-

quent. A major job could tie up the whole available force for a couple of days. If another truck encountered serious trouble, there was nothing to do but let it stand idle until the first job had been completed. That was serious during rush seasons.

Now that drivers have been handed the responsibility of keeping their truck in shape, the shop is able to organize its work. Inspections continue as before, but on Monday morning the foreman goes through the

reports that were handed in the previous Saturday night. As all the trucks are in the garage, the extent of the defects can be determined. The foreman is then able to schedule the jobs for definite days that week, the more important, of course, getting first call.

Theoretically, it is still possible for two trucks or more to come down with ailing motors or rear ends at the same moment, but actually it has not happened under the new system.



## ICC TAKES ON

### Driver salesmen and farm truck

**A**S of August 1, 1940, private carriers engaged in interstate or foreign commerce will be subject, with certain exceptions, to the same safety regulations prescribed by the Interstate Commerce Commission for common and contract carriers. A decision to that effect was made by Division 5 of the Commission in Ex-Parte No. MC-3.

With the exceptions noted below, all private carriers are made subject to Part 1 of the regulations which deal with Qualifications of Drivers. (See April, 1940, issue, page 118, for detailed regulations.)

All private carriers are subject to Part 2, Driving of Motor Vehicles. (See index, page 3 of this issue, for detailed regulations.)

All private carriers are subject to Part 3, Parts and Accessories Necessary for Safe Operation. (See April, 1940, issue, page 38, for detailed regulations.)

All private carriers are exempt from Part 4, Reporting of Accidents.

All private carriers, with exceptions noted below, are subject to Part 5, Hours of Service of Drivers. (See April, 1940, issue, page 128, for detailed regulations.)

All private carriers are subject to Part 6, Inspection and Maintenance. (See index, page 3 of this issue, for detailed regulations.)

Briefly, the Hours of Service regulations provide that no driver shall remain on duty for a total of more than 60 hours in any week, which

In fact, there will be less and less likelihood of its happening each week the system is continued. Major jobs are being licked before they attain their majority.

As already noted, the advantages of the new system have not yet shown up on the cost records. Future savings cannot be set down on sheets and card files.

The daily reports on costs are kept by the shop foreman. Space is provided for recording the whereabouts

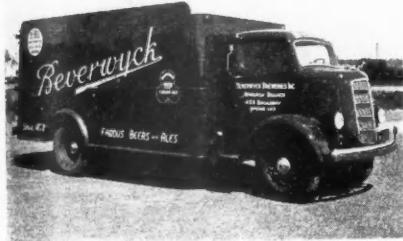
of the truck that day, its mileage if it was on the road, the amount of gas and oil consumed, the tires and tubes applied or serviced, and the labor and material used in repairs. Repair figures are broken down into body and mechanical classifications and those necessitated by accidents.

Once a month these reports, one for each vehicle, go to the office. Here are kept two separate sets of cards, one for the actual operating costs, the other for complete costs.

The latter, naturally, include depreciation, insurance, license fees, garage rent, supervision and other fixed charges.

From an operating standpoint, the first card is the more important. Each card has spaces for six months. Hours and miles of service, the tire and tube data, and the repair costs are posted directly from the daily report sheet. Gas and oil figures, however, are averaged, and the results

(TURN TO PAGE 82, PLEASE)



## PRIVATE TRUCKS

**drivers are accorded certain exceptions**

means any period of 168 consecutive hours. A driver is on duty from the time he begins to work or is required to be in readiness to work until the time he is relieved from work and all responsibility for performing work. If a carrier operates vehicles on every day of the week he may permit drivers to remain on duty for a total of not more than 70 hours in any period of 192 consecutive hours.

No driver shall drive or operate a motor vehicle for more than 10 hours in the aggregate in any period of 24 consecutive hours unless he is off duty for 8 consecutive hours during or immediately following the 10 hours' aggregate driving or within the period of 24 consecutive hours. Time spent sleeping in a berth may be fig-

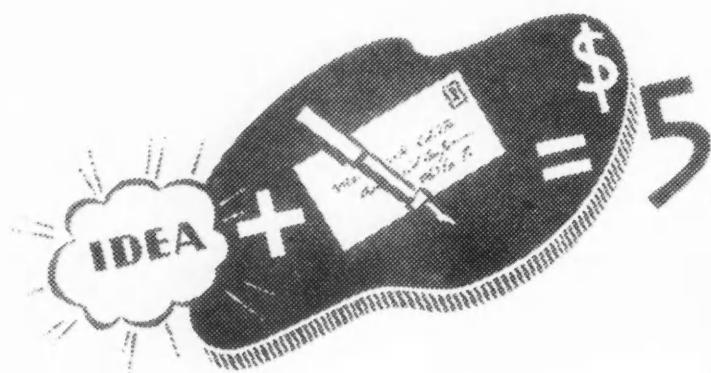
ured as off duty. All drivers must keep a log as stipulated in Rule 5 (a) of the Hours of Service Regulations. This rule does not apply to drivers of vehicles operating in interstate or foreign commerce wholly within a municipality or between contiguous municipalities.

Speaking of the term "interstate and foreign commerce" the I.C.C. decision had this to say:

"The physical operation of a truck in the transportation of property from one state to another is not the sole test of whether it is engaged in interstate and foreign commerce. Under the decisions of the Supreme Court of the United States a carrier may operate physically within the

(TURN TO PAGE 88, PLEASE)





## SHOP

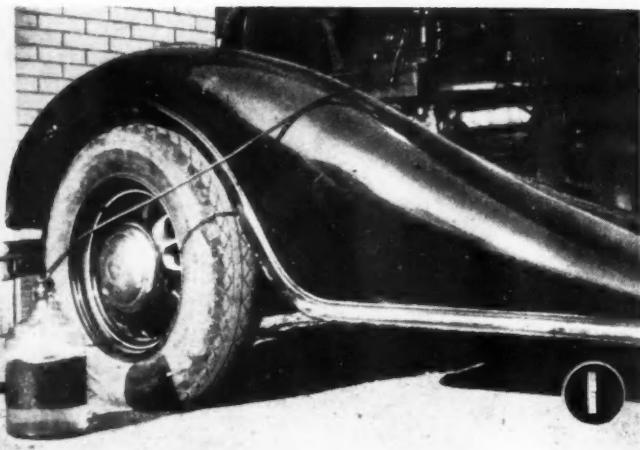
# HINTS

### 1. Gas Tank Drain

By J. L. Lyden

Phillips Bros. Coal Co., Pittsburgh, Pa.

For removing the water from the bottom of our gasoline storage tank we use the apparatus pictured. It consists of a one gallon glass jug fitted with a cork stopper through which two short pieces of  $\frac{1}{4}$  in. tubing are inserted. These extend just through the cork on the inside and on the outside far enough to accommodate two lengths of windshield wiper tubing. Several lengths of discarded  $\frac{3}{8}$  in. tubing were soldered together to make a suction pipe reaching to the bottom of the tank and a coarse strainer was attached. One piece of tubing is connected to the suction pipe and the other is connected to the windshield wiper connection of the nearest car. A moment's running serves to bring up any water that may be present at the bottom of the tank.



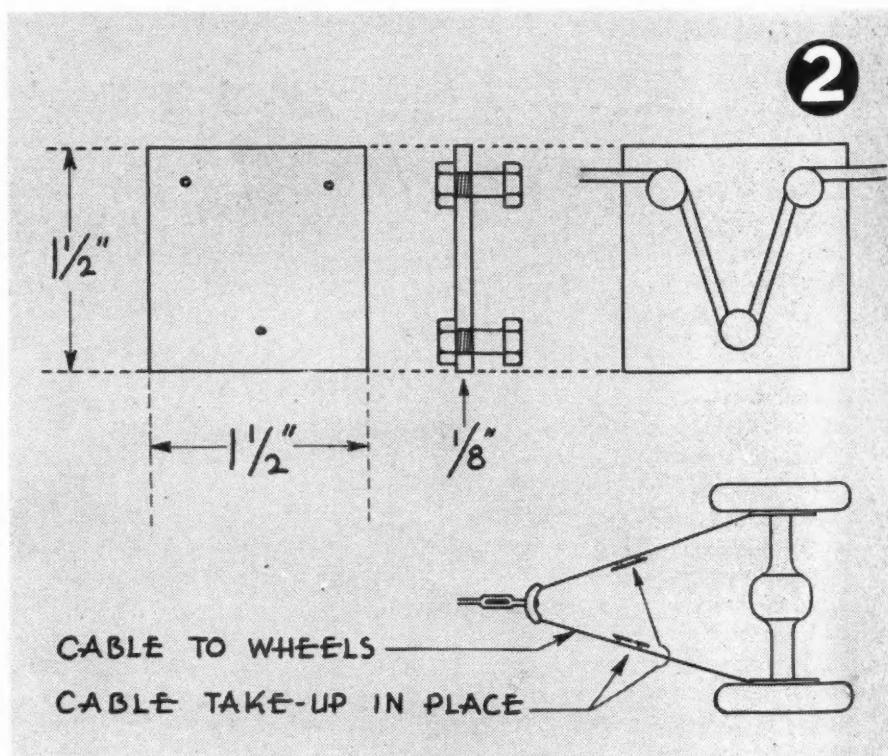
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### 2. Brake Cable Shortener

By Cayley K. Zerr

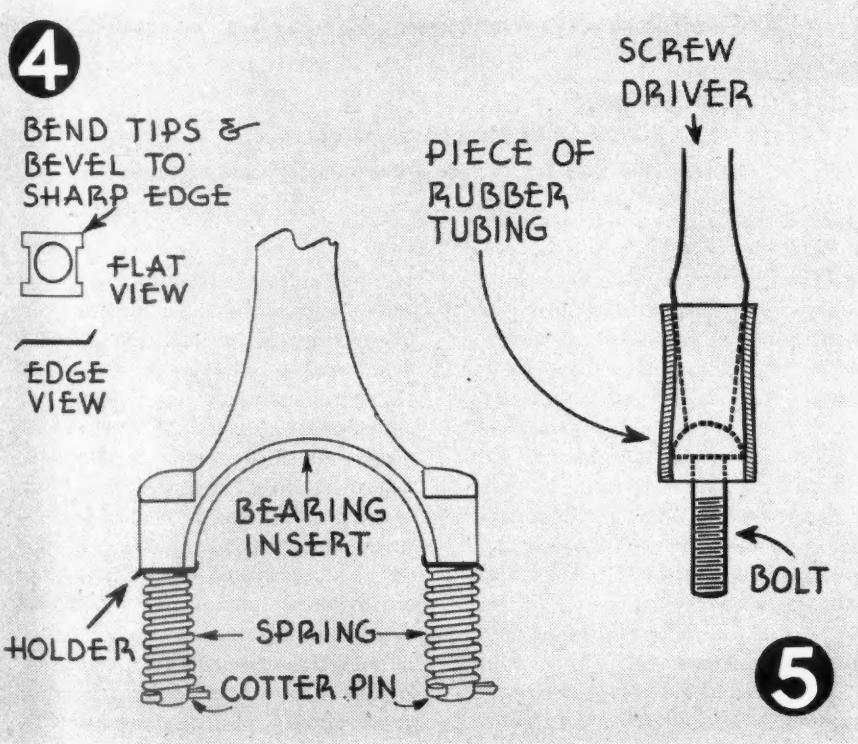
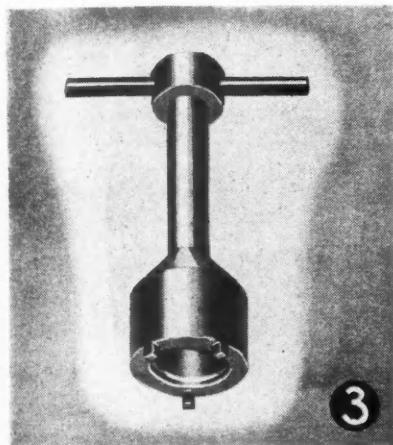
General Baking Co., Wilmington, Del.

We found on our 1939 Fords that the parking brake adjustment on the front cables only would not give us full lining life. To put an adjustment on the rear brake cables would mean pulling the wheels so we took a piece of cold rolled steel  $1\frac{1}{2}$  in. x  $1\frac{1}{2}$  in. x  $\frac{1}{8}$  in. and drilled it as shown in the sketch. These holes were tapped with a  $5/16 \times 24$  thread. Bolts were screwed into them and locked with



## C A N Y O U U S E \$ 5 ?

**That's what Commercial Car Journal pays for each shop hint accepted for publication on these pages. Simply send in the idea which you believe to be original. Don't worry about style. Acceptance is based on the idea. CCJ will edit it for publication**



nuts. The cable was then laced through the bolts. As the adjustment gave out we installed one of these on one side and then when further adjustment was needed we put one on the other side.

### 3. Headlamp Tool

By Harry Wille

St. Joseph Railway, Light, Heat  
and Power Co.

The illustration shows a three-tooth tool made to remove or reinstall the lamp socket in a Stabilite headlamp reflector. The three teeth fit into the corrugated spring steel locking washer that holds the socket in the reflector and by placing the teeth of the tool in the notches of the locking washer allows the washer to be turned very easily in either direction for locking or unlocking.

### 4. Connecting Rod Washer

By Charles S. Crawford

Atlantic Refining Co., Williamsport, Pa.

We have made some washers to hold connecting rod bearings in place when it is necessary to remove the piston assembly. An assortment is needed for different size connecting rod bolts and for the difference in distances between the hole and the tip. Then if the correct washer is installed above a spring and cotter pin retainer it is possible to tap the piston and rod into position without wasting a lot of time centering the bearing.

### 5. Bolt Holder

By Wm. McKenney

Baltimore, Md.

We have found it very convenient to place a short piece of rubber tubing over the screw driver blade when starting a bolt in a position that it was impossible to hold the bolt. Simply fit the blade into the slot in the bolt head and the rubber tubing will hold it in place until the threads are engaged.

# BUY IGNITION BY THE MILE



"YOU ask me how ignition can add up on the profit side of the commercial vehicle operator's ledger," said Mr. J. L. Arthur, Delco-Remy engineer identified with ignition research and design for twenty-five years, in reply to the question put him by your reporter in a recent interview. "Just how do you mean that?"

"Well," said your reporter, "the commercial vehicle operator today must study every angle of his operation with a view to economy because he knows how an almost infinitesimal leak per mile of operation can total up at the end of the year."

"And you would like to know what he can do from the ignition end to avoid loss." We nodded and Mr. Arthur continued, "The fleet operator usually figures his operating costs on a mileage basis, and it is fair to consider ignition on the same basis. The first consideration is always, of course, selection of equipment. Upon

**Type of service, including mileage, speed and number of stops, must be considered in the selection of correct ignition equipment**

**By WILLIAM H. CROUSE**

An interview with J. L. Arthur, Delco-Remy ignition engineer

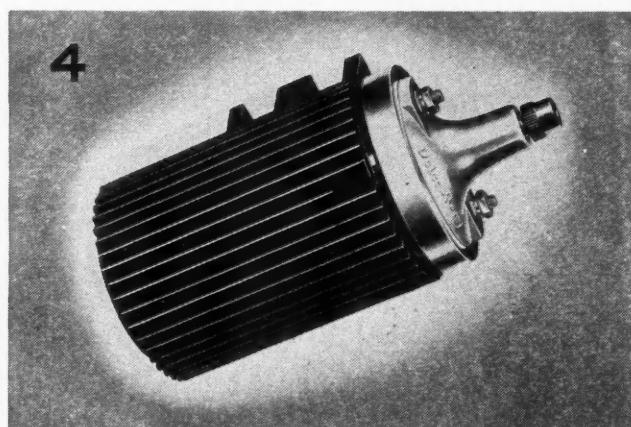
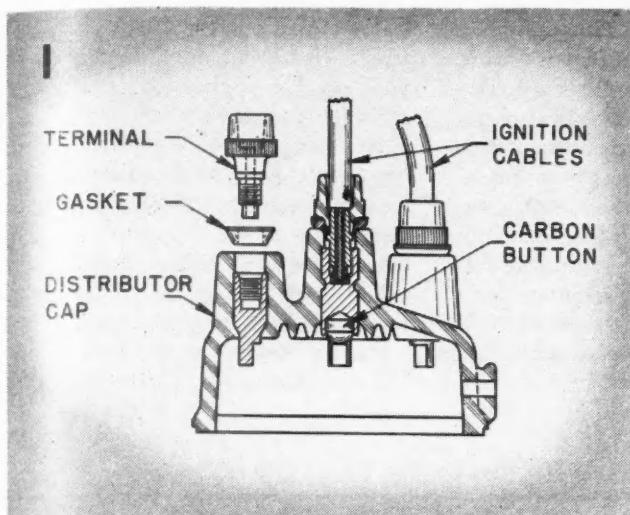
how well he does this depends his maintenance and running costs, and the amortized cost per mile of the vehicle, including those extras for repair, road failure, etc. Obviously small, light, overloaded equipment will be more susceptible to road failure, will require more frequent maintenance checks. On the other hand, heavy, more expensive equipment would not be justified on local, light haul applications."

"To narrow the problem down to ignition—" we put in.

"Actually," Mr. Arthur answered, "the problem of selecting the ignition

equipment for any particular engine under any particular operating condition is usually so involved that ignition equipment manufacturers, and the engine manufacturers, must necessarily work together. Dynamometer tests of the engine under varying conditions of load, speed, and throttle, oscillographic studies of the ignition spark characteristics, proving ground tests—all these and many other things are necessary to accurately fit the ignition to the application.

"In our studies, we break the problem down into two separate but definitely related phases, the operating



**Typical heavy-duty ignition equipment** includes (1) distributor with screw terminals and rubber gaskets, (2) channeled contact lever arm with large point area, (3) hermetically sealed, large-capacity condenser, and (4) sealed and fin-cooled coil. See text for detailed discussions of these units

phase and the constructional phase. In the operating phase, we must work out the spark advance for varying engine speeds, loads, throttle openings and so on. First, we determine the amount of advance necessary at each engine speed with wide open throttle to develop maximum power. This gives us the full load curve, which we build into the distributor by means of the centrifugal advance mechanism. If a large percentage of operation is to be at part throttle, which results in vacuum in the intake manifold, additional advance at part throttle will usually contribute to

greater gasoline economy. A vacuum mechanism which advances the spark in accordance with vacuum conditions in the intake manifold will provide this economy spark advance. After we have determined the exact requirements of what the spark must be, how and when it must be introduced into the engine cylinder for maximum power and economy under all operating conditions, we begin to think about the constructional phase."

"In other words," your reporter suggested, "how to build the distributor, the coil, and condenser to do the job you know the ignition must do."

"And which will *keep on* doing the job under the actual conditions the equipment will meet in operation. At this point in our design we must begin to consider the type of operation, heat, dust, vibration, moisture, speed, and a multitude of other factors, and must design the equipment to satisfactorily operate under the conditions found on the application. Here our

job is to lengthen the life of the units and guard against road failure, from whatever cause. Predominantly in my mind," Mr. Arthur went on thoughtfully, "is always the desire to keep the equipment as simple as possible, consistent with the requirements of the application. There's always the danger that the mechanism will get too complicated in the designing stage, with the result that there are just that many more parts which can ultimately fail. You know, the part that causes the least trouble is the part you *don't* put on the vehicle! Simplicity is to me the earmark of good design. To figure out a mechanism which will accomplish a given job may not be so difficult—but to simplify the design down to an absolute minimum of working parts—that's good design which will be more trouble free, less apt to fail under any condition.

"But," Mr. Arthur smiled at us, "I seem to have wandered a little from  
(TURN TO NEXT PAGE, PLEASE)

**IGNITION (Continued from page 31)**

the subject. All I wanted to point out was that we try to consider every condition a distributor, for example, will encounter on a particular engine in a particular type of operation, and build the distributor in such a way that failure from any cause arising from that type of operation, is reduced to a minimum."

"You have to go through this same procedure to determine the correct ignition equipment for each engine?" we asked doubtfully. "Seems like you'd get a different answer every time."

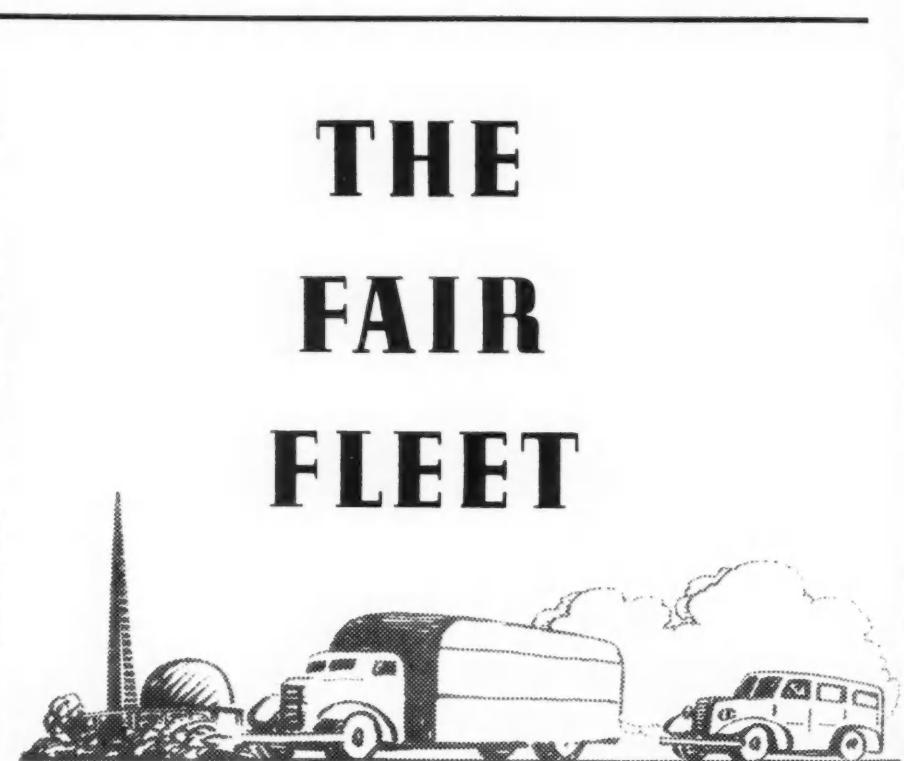
Mr. Arthur nodded. "We do have to go through this same complex procedure—you can't expect to get a set-up which is correct any other way. And you're right, too, in your second statement—we do get a different answer nearly every time. That's why we have about a thousand current models of distributors today. Probably we've built ten to twenty times that many in the past twenty-five years. It isn't that we like to build so many models, it's just that each engine is a unique problem from the standpoint of ignition and must be handled as such. For average service requirements, the distributor is usually supplied with either gray iron or bronze bearings, and a standard phenol resin compound cap is used. Where abnormal moisture or varied temperature conditions prevail, the cap may be molded from a more expensive special phenol resin compound which is less likely to crack and will resist the formation of carbonized paths across its surface due to high tension leakage when wet. A standard type condenser mounted internally on the breaker plate is usually used."

"When more severe operating conditions are met, a ball bearing may be added at the top of the shaft. The addition of the ball bearing requires a two-piece housing and there is a bronze bearing in the lower housing. The cap is of the special phenol resin molding compound I mentioned a moment ago which resists cracking and the formation of carbonized paths across its surface due to high tension leakage. Screw type terminals are used here to insure permanent high tension connections. For added assurance of permanent connections, we may use rubber gaskets under the screw terminals. (Fig. 1.) When

the screw terminal is tightened against this gasket, it cannot back out and loosen of its own accord. The rotor is also made of the same material as the cap. There is a high pressure grease fitting and a grease reservoir in the bottom of the upper housing to lubricate the ball bearing. This permits the distributor to operate for more miles between lubrication periods and consequently reduces the cost per mile for maintenance. Added to this is the greater safety against road

failure resulting from the heavier design. The heavy-duty condenser is used on this application. I want to get back to that in a moment.

Another step in the direction of heavy-duty distributor construction to meet the requirements of a particular application is the type which uses a double row ball bearing at the upper end with the lower end of the shaft supported by a single row ball bearing. The reason for the double row ball bearing is that it supports not



**G**ANGWAY for the feet of that statue dangling precariously over the heads of bystanders and suspended on the end of a huge mobile crane! Don't be brushed off your own feet by the branches of that full-grown passing tree! Dodge, if you can, the course of that little New York Edison truck checking electrical connections at every manhole!

Thus was comfort at a premium on Flushing Meadow early last month, for the New York World's Fair was undergoing the final stages of its face lifting. Last minute preparations were under full swing so that the show could go on when the gates swung open on May 11.

Just as trucks built the Fair, just

as trucks kept the Fair going last year, so trucks took on the job of making it ready for the 1940 run, and the job of keeping it going during the present season. Is that much of a job? Let's take the Fair's own fleet as an example.

Composed of 105 units and under the jurisdiction of Fleet Superintendent Wilbert B. Wenck, the Fair fleet comprises everything from a special grass cutter to the world's most powerful fire fighter. The bulk of it, however, consists of a fleet of passenger cars for the transportation of police, executive personnel and visiting dignitaries; five ambulances; a number of motorcycles, tractors and miscellaneous equipment, and 42

only the upper cam shaft, but also the breaker plate. The breaker plate on this unit can rotate a number of degrees with respect to the housing, the purpose of this being to permit vacuum advance. The vacuum advance mechanism is mounted on the outside of the distributor bowl and is linked to the breaker plate to secure this advance. The double row ball bearing supporting both the cam shaft and the breaker plate assures that wear of the bearing support will

not cause a variation of point opening with a consequent loss of performance. The ball bearing at the lower end of the shaft is the sealed type, to prevent engine fumes from arising into the distributor and causing corrosion or wear of the points and advance mechanism. This unit has a hold down cover over the advance mechanism, assembled with lockwashers and nuts. The hold down cover serves as an added protection against road failure."

"We can see where all these things will save the vehicle operator money from the standpoint of maintenance and freedom from road failure," your reporter said.

"Ignition coils, too, have come in for considerable improvement from the same standpoint," Mr. Arthur added. "Heavy duty ignition coils now available (Fig. 4) have the ability to continue functioning under adverse conditions because they are

(TURN TO PAGE 66, PLEASE)

**Nearly 100 trucks and passenger cars  
roll more than half a million miles to  
satisfy a season's transportation needs  
within New York World's Fair grounds**

**By BART RAWSON**



trucks of nearly every conceivable size and shape. (For a full discussion of the fleet, see "Trucks Make the Fair Go," COMMERCIAL CAR JOURNAL, July, 1939.)

The fleet's job is to handle the transportation need of every project operated by the Fair itself. That includes the functions of the administrative, financial, medical and laundry departments, fire control, and the multitudinous hauling jobs connected with the landscapers, painters electricians, and even construction gangs working on the public buildings. If the management needs a special car for a King to ride in state (pre-war) or a rolling bandstand replete with sound apparatus to transport a big-

name band in action, Mr. Wenck gets the call.

Is it much of a job to handle these transportation needs? From the standpoint of high mileages, grueling runs, or involved and complicated maintenance, the answer is definitely "no." But from the standpoint of availability of equipment at precise moments, from the standpoint of safety of operations where much of the going is through milling thousands, or from the standpoint of keeping equipment immaculate in appearance to please the esthetic sense of an immense "public," or from the standpoint of operating within a closely scrutinized budget, then the answer is clearly "yes."

To keep things running smoothly during last season's operations, took 670,937 miles of operation by this one division of the Fair's total trucking operations. It took 93,669 gallons of gasoline and approximately 6000 quarts of oil to keep them going with an average gas mileage of about 8 m.p.g. on passenger cars and 7 m.p.g. on the preponderantly light truck fleet. Passenger car tires averaged 10,000 miles apiece in the stop-and-go service, trucks ran 7000 miles per tire, and total tire purchase to date have amounted to 85.

All equipment was brand new when purchased but some units were bought as early as the summer of

(TURN TO PAGE 78, PLEASE)

# FANCY GRILLE WORK



**An ingenious and simple way to repair broken grilles and reduce the cost of front-end accidents**



FOR the first time a simple and dependable method is available for repairing cracked, broken and bent white-metal automobile grilles, which is particularly applicable to chrome plated die castings having insufficient body to permit repair by usual soldering or fusion welding procedures.

Briefly the procedure for doing this work consists of applying half and half solder directly to the chromium plating using a special acid flux of commercial phosphoric acid and reinforcing the solder

with short pieces of bronze welding rod, bronze wire, copper sheet, copper screening or anything that will serve as a splint to give the solder strength across the break in the grille.

Since white-metal becomes spongy when heated above 800 deg. F. it is necessary to keep the temperature below that point. Half and half solder melts at 400 deg. F. and there should be no difficulty with softening the white metal when doing the soldering. As the phosphoric acid flux is highly corrosive, care must be taken to keep it off the hands and clothing and

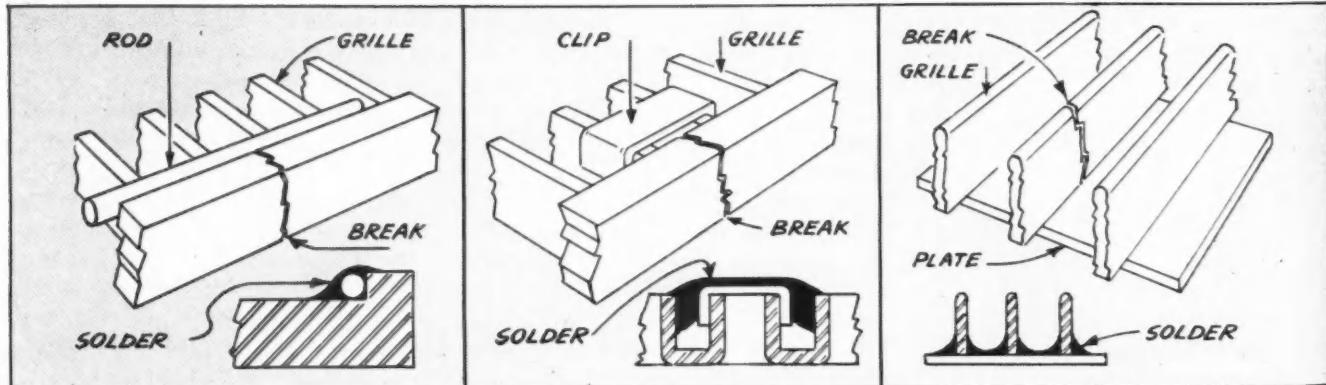
in addition it should not be allowed to remain on the chromium plating.

A No. 1 tip should be used in the torch and the oxygen and acetylene pressures should be adjusted to produce a harsh neutral flame with an inner cone about  $\frac{1}{8}$  in. in length. This should be done by adjusting the valves on the blow pipe. Finally reduce the oxygen supply still further so as to produce a slightly excess acetylene flame with a long outer envelope. This flame is about 10 to 12 in. long, narrow and bluish and is typical of that used for many soldering jobs.

PHOTOS COURTESY LINDE AIR PRODUCTS CO.

These sketches show three types of reinforcing splints used in the repair of white-metal die cast grilles. Left—bronze rod. Center—copper clip. Right—copper sheet. Take

care not to place any of the splints where they would interfere with fitting the grille onto the car. Clips are small pieces of light gage sheet copper cut to shape with shears.

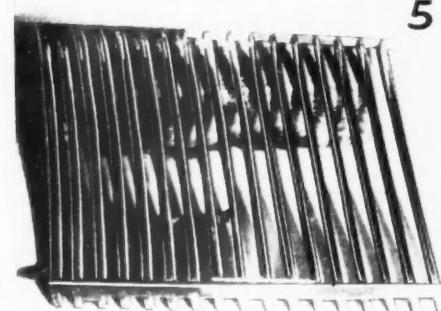




1. With the flame adjusted as described in the text, the bent section is heated until it is just hot enough for water to boil off.



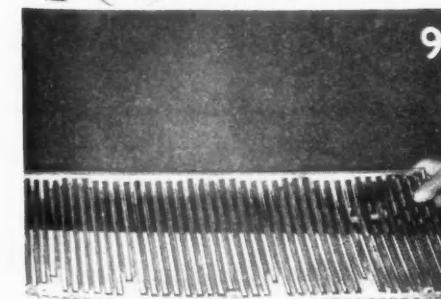
2. While the heat is continued, the bent section is straightened by applying a slow steady pressure. Do not try to hammer into shape.



3. Lacquer is removed with a lacquer thinner from sections to be soldered. Do not use a file or emery cloth as this removes the chrome-plating.



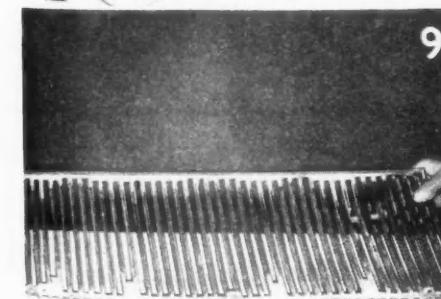
4. After two sections are aligned, a clip made of light gage sheet copper is placed next to the break between the fractured members.



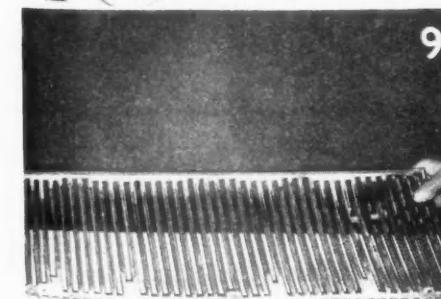
5. Bronze welding rod is used as the reinforcing splint at the opposite end of the break. All clips and rods are placed on the back side of the grille.



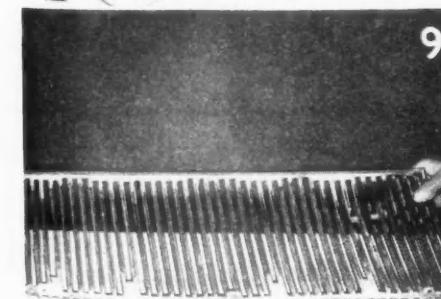
6. Phosphoric acid flux is spread on the area to be soldered. Heat is then applied, holding the blow torch tip about 6 in. from the work.



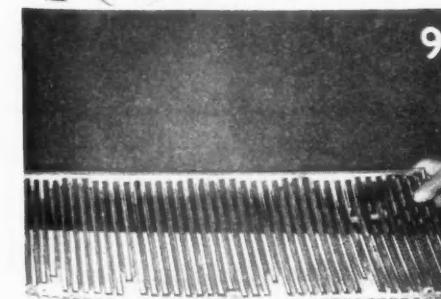
7. When the flux starts to boil, the metal is hot enough for tinning. Then the entire area is built up until the rod or clip is firmly anchored.



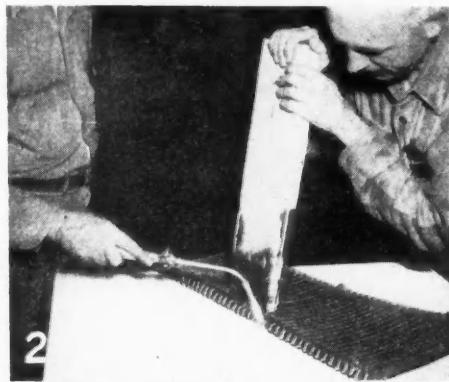
8. After cooling, parts should be washed in water to remove excess flux. High spots can be removed with a file.



9. This view shows the back side of the repaired grille. Four clips are embedded along the bottom and four short lengths of rod along top.



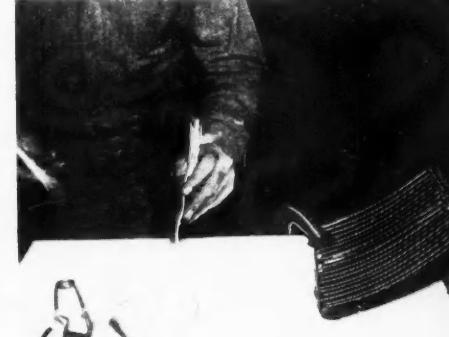
10. Here is the completed job. The repaired areas will not be noticed when they are relacquered and the grille is replaced on the car.



2



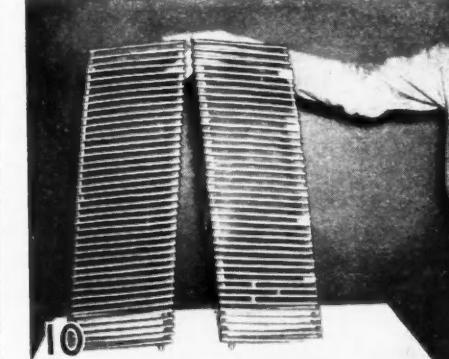
4



6



8



10

# PRIVATE POW-WOW



**J. R. NORTH**

Commonwealth & Southern Corp., who acted as chairman of Public Utility Fleet Operators Conference

## Employe training in operating and maintaining vehicles intrigues public utility operators more than all other subjects

DURING the two-day SAE Transportation and Maintenance meeting held at Pittsburgh and reported in the last issue, the Public Utility fleet operators closeted themselves and held a closed meeting. Attendance at this meeting was restricted to operators of public utility fleets, all manufacturers' agents being barred. Jack North, Commonwealth and Southern, presided as chairman while Randolph Whitfield, Georgia Power Co., acted as secretary. Over 50 operators attended and took part in the discussion of utility fleet problems which was so informal and so fast that at times it was hard to keep abreast of what was going on.

In keeping with the wishes of the meeting it will be necessary to omit portions of the discussion and also to preserve anonymity of the discussors. As a matter of fact permission to report any part of this meeting represents a departure from standard

practice established by this group.

Training of employees seems to be one of the most important problems, judging by the amount of discussion on this subject. It took quite some time for the meeting to come to some agreement of what was meant by training. One operator finally volunteered that he had three training courses for different types of employees. This admission was met with, "What are we waiting for. This is what we want. All we have to do is get mimeographed copies of these courses."

The operator who has the courses said that the smallest course was a stack of sheets so high (indicating about 6 in.) and that to be worth anything a training course had to be complete in all detail or it would not produce results. The volume of material cooled off the idea of distributing copies of the courses.

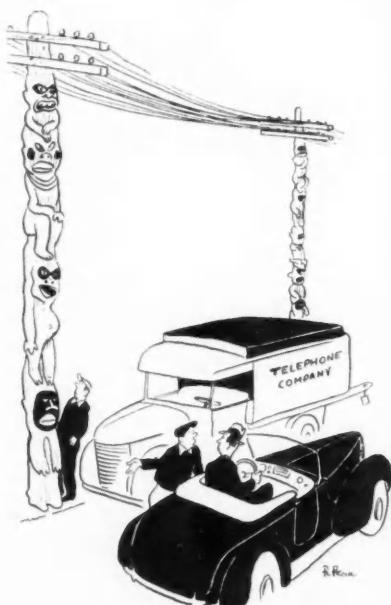
Other operators, especially those in

large cities, indicated that they had been most successful in cooperating with public trade schools or university extension courses. In some cases the institutions were glad to modify courses to fit a particular need especially when the public utility would enroll employes as students or take some of the graduates into the company. Employe discussions, company manuals, apprenticeship and supervisory instruction all were discussed but most of the interest centered around cooperation with formal schooling organizations.

Several operators lamented that the training idea was limited to operating personnel when it should be extended to drivers regardless of their rank in the company. One fleetman volunteered the information that every employe of his company was responsible to him so far as his conduct with an automobile was concerned. He was the only one present who actually had supervision over employes of other departments so far as transportation went. Envy is not too strong a word to describe the feelings of some of the others.

Dispatching of public utility vehicles came up as a subject of discussion but it brought little response except evidence that most operators present favored the pooling of cars wherever possible.

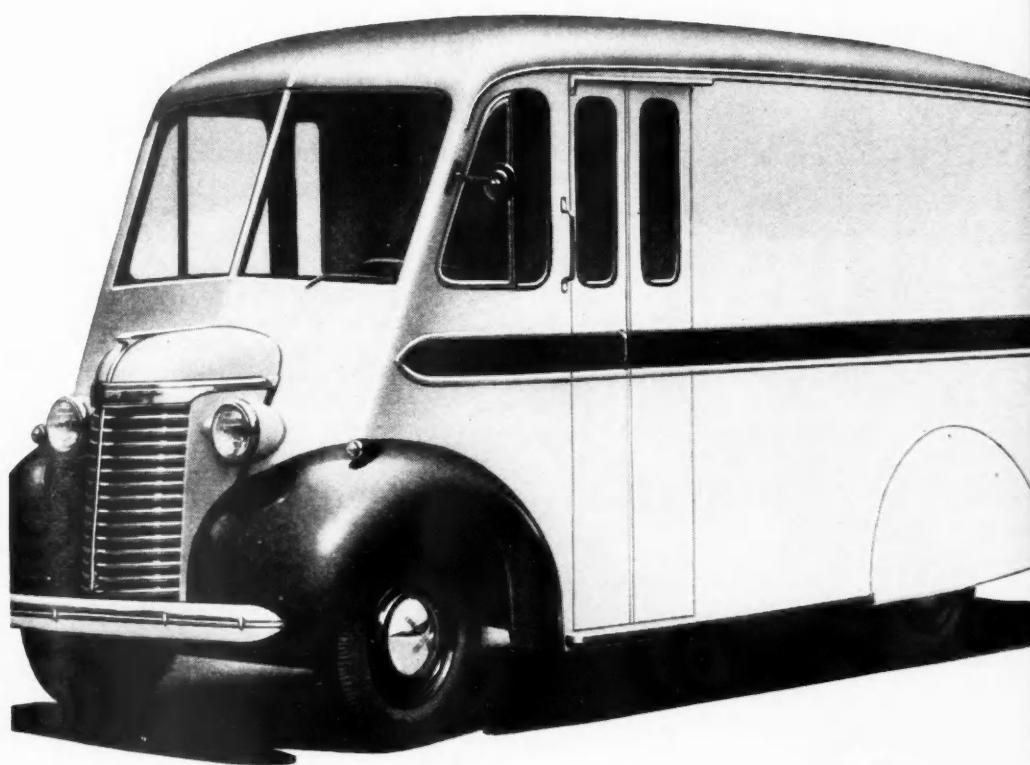
C.O.E. trucks interested most of the operators chiefly as a means of  
(TURN TO PAGE 74, PLEASE)



"Have you seen any Eskimos passing this way?"

# DUBL-DUTI

## PACKAGE DELIVERY



### More load on the truck Less load on the driver

In door-to-door delivery of light and bulky merchandise, new economy and new efficiency are obtained through the use of the Chevrolet Dubl-Duti truck. The unit itself is more efficient, having far greater load capacity (about 300 cu. ft.) than conventional trucks of the same wheelbase. Furthermore, it adds to the efficiency of the driver, because it provides far greater ease of package handling, whether loading or unloading, than do trucks with conventional type bodies. Thus, both truck and driver cover more ground and handle more deliveries, and driver-salesmen are enabled to increase their orders. . . . Five different types of rear closure fit the Chevrolet Dubl-Duti to a wide variety of uses.

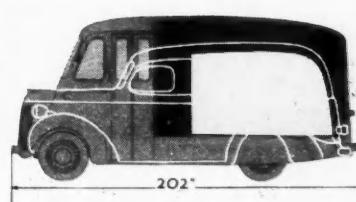
CHEVROLET MOTOR DIVISION, General Motors Sales Corporation, DETROIT, MICHIGAN

# CHEVROLET

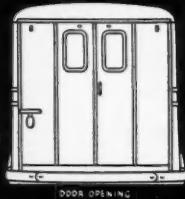


#### DOUBLES THE CAPACITY

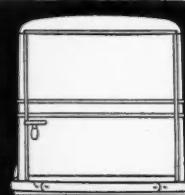
*Full-height front doors and the low front floor are big time-savers. The seat design permits free use of either side for entrance and exit. . . . The roomy body has double the capacity of the conventional panel truck (see diagram).*



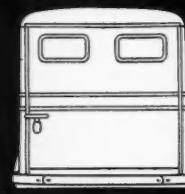
BODIES  
AVAILABLE IN  
FIVE REAR-END  
STYLES



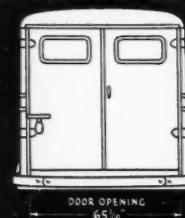
STANDARD REAR DOORS  
Two rear doors,  
half-width opening



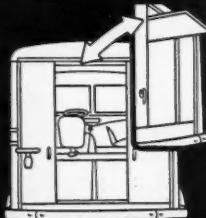
SOLID BACK  
OPTION NUMBER 1  
Solid rear panel,  
no windows



SOLID BACK  
WITH WINDOWS  
OPTION NUMBER 2  
Solid rear panel,  
two windows



OPTION NUMBER 3  
Two rear doors,  
full-width opening



OPTION NUMBER 4  
Vertical-lift door,  
half-width opening



## BROOKS E-Z ROUTE BODY

**T**RANSPORTATION ENGINEERS, INC., Detroit, has recently introduced a modern all-steel milk body designed exclusively for the standard Ford 1/2-ton chassis. Known as the "Brooks E-Z Route" body, it has loading space for 44 standard size

cases, a full-width, easy-access aisle and plenty of space for the driver.

Special features include a new-type swivel chair which locks when desired in forward position, a remote control door handle, a handy desk-high shelf to facilitate bookkeeping

Using the standard Ford chassis, the new Brooks E-Z Route body by Transportation Engineers, Inc., provides an efficient and economical multi-stop vehicle. Details of remote control door handle and swivel driver's seat which may be locked in forward position are also shown in photographs above

and plenty of extra storage space for small items.

Ease of adaptability to the Ford chassis without mechanical changes plus the operating efficiency of the Ford 60 h.p. engine should add up to a very economical unit.

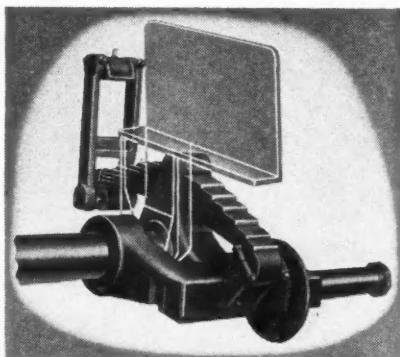
## UTILITY THIRD AXLE SUSPENSION

**T**WO new third axle arrangements incorporating unusual suspension systems are offered by the Utility Trailer Mfg. Co., Los Angeles.

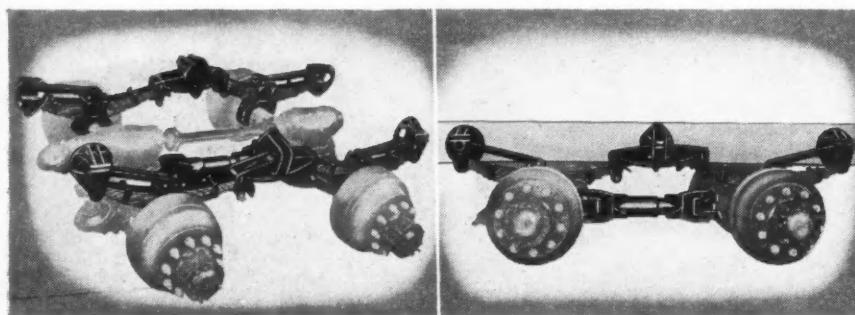
One, for trailing axle, combines the advantage of a spring rocker arm for easy riding with the simplicity and flexibility of the stub axle or knee-action type of suspension. Strength and rigidity to take care of thrusts

are provided by the use of cast steel in the rocker arm. The unit is identified as model 300.

The second unit incorporates a new type spring suspension and torque arm assembly for the tandem drive assembly. Light weight and virtual elimination of chatter from driving and braking torque are special advantages claimed for this unit.



Above: The new model 300 Utility third axle attachment showing details of spring rocker arm, spring mounting and offset (knee action) stub



Left: Two views of the Utility tandem drive arrangement. Note short torque arms over each spring assembly as well as the specially designed torque bar connecting the two axles

## Exide Batteries cover 1,500,000 miles per year... in fleet of The Knudsen Creamery Co., Los Angeles



A few of the 150 Exide-equipped units in The Knudsen Creamery Co. fleet.

THE 150 units in The Knudsen Creamery Co. fleet travel a million and a half miles a year distributing dairy products in an area extending from central California to the Mexican border. All are Exide-equipped...this operator, like scores of others, uses Exides exclusively.

By their dependable performance and their exceedingly long, trouble-free life, Exide Batteries consistently cut battery cost per mile. This has been true in the past, as so many fleet operators have discovered for themselves. It is more true today of the Exides for heavy-duty truck service...they deliver an

average of 25% longer life than ever before.

Exide engineering has developed a startling improvement in plate design which makes this possible. The line includes Exide types XH-131, XH-152, XH-173, and XH-194. These batteries are also available in wood and fiberglass separator construction for "cycling"

service. Why not let Exides cut your battery cost per mile? See your Exide Wholesaler today, or write to us.

**Exide**  
HEAVY-DUTY  
TRUCK BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia

*The World's Largest Manufacturers of Storage Batteries for Every Purpose*  
Exide Batteries of Canada, Limited, Toronto

# SHOWCASE OF NEW PRODUCTS

## New Items for Porto-Power Unit

To provide a wider range of utility for its Porto-Power unit the Blackhawk Mfg. Co., Milwaukee, Wis., has introduced a new Ram Kit, Spee-D-Coupler and Duckbill Spreader, together with a new electric pump.

The new kit contains the standard 7 and 20-ton rams in addition to the new 4-ton Midget Ram and Spee-D-Coupler. The Spee-D-Coupler makes it possible to adapt any Porto-Power unit to the full range of 4, 7, 10 and 20-ton rams. The Z-92 Duckbill Spreader, designed for straightening

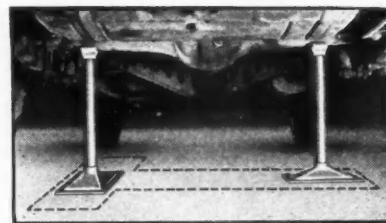


and spreading crushed sections and back panels of bodies, fits all 10-ton rams. The motor-driven pump handles any Porto-Power ram, from 4 to 50 tons, old or new. The motor is of the 115 volt AC-DC universal type.

## Hein-Werner Safe-T's

A new set of a non-adjustable low-priced stands or shop horses has been introduced by Hein-Werner Motor Parts Corp., Waukesha, Wis. Known as "Safe-T's" because of their unique base arrangement, the new units are sold in pairs with one base

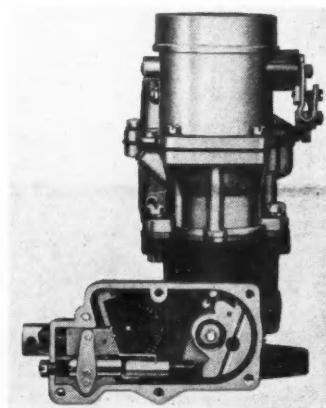
mounted parallel with the axle, the other perpendicular to it, so that both lateral and longitudinal thrusts are resisted. They



cannot be set up in any other way. Available in 5 and 10 ton models, 18 to 24 in. height, with a list price of only \$3.60 for the 5 ton models.

## Zenith Offers the Gov-U-Retor

The Gov-U-Retor, a new device combining governor and carburetor into a compact single unit, is now available from the Zenith Carburetor Division, Bendix Aviation Corp., Detroit. The elimination of a separate governor throttle plate as is used in ordinary governors causes normal vacuum to be exerted on the jets and delivers correct fuel mixtures with a minimum of disturbance of fuel distribution. The Gov-U-Retor is only 5/16 in. higher than the standard Zenith carburetor of an equivalent type. There is a minimum of moving parts, all of



which are mounted on a cast iron throttle body with a minimum chance of casting warpage.

## Midland Diaphragm

A new air diaphragm chamber is now available from the Midland Steel Products Co., Cleveland, Ohio, manufacturer of air and vacuum brake equipment. The new unit is of the stud mounted type and is built in 9 in. and 10 in. sizes.

## New Line of Soldering Irons

Three new soldering irons providing a range of sizes for practically all the jobs in the average shop have been announced by the Belden Mfg. Co., 4689 W. Van Buren St., Chicago.

The 60-watt iron, 7621, for light jobs such as wire connections, has interchangeable  $\frac{3}{8}$  in. and  $\frac{5}{8}$  in. tips. The 100-watt iron, 7627, for medium light shop service, has



a  $\frac{7}{8}$  in. tip. The 150-watt, heavy duty iron, 7633, has a  $1\frac{1}{8}$  in. tip for heavy work. The 7633 also has radiation fins to dissipate heat and keep the handle cool.

A 6-ft. Belden "Cordless-free" 3000-cycle heater cord is supplied with each iron, as well as a portable soldering iron stand.

## New Do-Ray Auxiliary Lamp

A new driving and passing lamp known as Series 600, using the latest type GE sealed beam lighting unit, is announced by the Do-Ray Lamp Co., 1458 S. Michigan Ave., Chicago. The new lamp, designed as an auxiliary unit for cars, trucks or buses with old headlamps, or under conditions of poor visibility, has a housing of heavy chrome-plated brass with a malleable iron bracket for strength. Supplied with a special rotary switch and ten feet of silver-colored wire. Available in pairs with one driving and one passing light or singly in either type.



## Airfoam Cushion

A new type upholstered Airfoam cushion designed to relieve truck drivers from excessive fatigue and nerve strain on long trips has been developed by the Comfort Cushion Co., 5301 Grand River Ave., Detroit, Mich. This is the most recent addition to the company's general line of cushions, mattresses for sleeper cabs and general upholstery.

The new cushion is self-ventilating and keeps comfortably cool even in the hottest weather. Dampness resulting from absorption of the moisture of perspiration is also prevented.

(MORE NEW PRODUCTS ON PAGE 110)

## SUCCESS STORY!



"In 1931 I started my trucking business with the down payment on a Federal truck and \$100.00 cash. Today my business is worth \$250,000.00. I've bought between 40 and 50 Federal trucks in all—and I attribute much of my financial success to the economy, low maintenance cost, and endurance of the Federal trucks I've used exclusively."

"Federal Unit #12, for example, has traveled 105,610 miles; Unit

#8, 91,140 miles; Unit #13, 61,189 miles; and so on. My fleet of trucks will not average \$5.00 per month each for repairs, while covering around 7500 miles every month—running in the mountains most of the time with an average payload of 20,000 pounds."

ROBINSON TRANSFER  
MOTOR LINE, INC.

*Amos Robinson*



A part of the fleet of Federal heavy-duty tractors, operated by Robinson Transfer Motor Line, Inc., Kingsport, Tennessee.

## YOU DO SAVE MONEY WITH FEDERALS!

THE SUCCESS STORY of Amos Robinson and his fleet of heavy-duty Federals has a meaning for truck buyers everywhere. You *do* save money when you use Federal Trucks! Lower operating and upkeep costs plus *extra* stamina which keeps Federal Trucks on the road and out of the repair shop, add up to sizable profit figures in a year's operations by any fleet owner. Robinson's experience is typical . . . proves that it pays to use trucks designed and built to save dollars in heavy-duty service. Actu-

ally the more powerful Federal engines—the huskier Federal chassis—result in faster running time, in less fuel used . . . in much longer life . . . in lower cost per mile.

Whatever your needs, Federal has the right truck for *you* in its complete line—ranging from  $\frac{3}{4}$  to 8 tons. Federal dealers are *specialists* in economical transportation . . . they know your hauling problems . . . and they know the answers that will enable you to save or make more money by using Federals.

## FEDERAL TRUCKS

FEDERAL MOTOR TRUCK COMPANY • DETROIT, MICHIGAN

Leaders in Commercial Transportation for 30 Years

# NEWSCAST

BART RAWSON COMMENTATOR



## Reo Christens New Model

First of the new Reo trucks rolled off the assembly line late last month, accompanied by due ceremonial proceedings, and headed for Mankato, Minn., for delivery to George A. Lewis, one of Reo's oldest distributors. Guests of honor at the christening included Max Templeton, mayor of Lansing, C. W. Otto, secretary of the Lansing Chamber of Commerce and members of Reo's official family.

## Huge Eastern Truck Combine

Application for Interstate Commerce Commission authority to operate a huge motor truck combine which would blanket the eastern seaboard has been filed with the ICC by the Transport Co. of New York.

Details of the initial step include the consolidation of Arrow Carrier Corp., Paterson, N. J.; Consolidated Motor Lines, Inc., (including subsidiaries) Hartford, Conn.; Brooks Transportation Co., Richmond, Va.; York Motor Express, York, Pa.; Waverly Place Co. (subsidiary of Kirby & Kirby, Inc.), Trenton, N. J.; Mundy Motor Lines, Roanoke, Va.; Motor Haulage Co., Brooklyn; and Super Service Motor Freight Co., Nashville, Tenn. Only the last name is expected to lose its identity in the initial deal which calls for an outlay of \$5,572,043 in cash and stock.

The Transport Co., incorporated in Delaware, is headed by B. M. Seymour, president of Metropolitan Securities, which owns Metropolitan Distributors, a truck leasing company, and General Truck Sales & Service Co., distributor for General Motors Corp. The company would be capitalized at about \$25,000,000 and Kuhn Loeb & Co., New York, would underwrite the public offerings.

Other large eastern motor carrier firms,

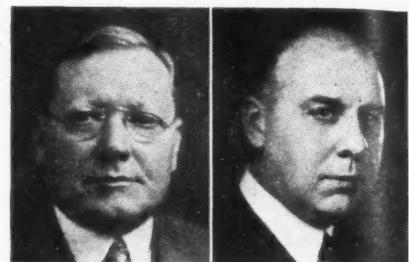
## TRUCK PRODUCTION (United States and Canada)

	1940	1939	Per Cent Change
January . . . . .	73,999	64,093	+ 15.8
February . . . . .	71,669	63,606	+ 12.8
March . . . . .	75,413	77,103	- 2.2
<b>3 Months</b>	<b>221,081</b>	<b>204,802</b>	<b>+ 7.8</b>
April . . . . .	68,066		
May . . . . .	63,793		
June . . . . .	66,964		
July . . . . .	62,644		
August . . . . .	40,868		
September . . . . .	27,559		
October . . . . .	65,078		
November . . . . .	73,407		
December . . . . .	83,825		
<b>Total . . . . .</b>	<b>757,006</b>		

which are expected to become a part of the new organization at a later date, include Horton Motor Lines Charlotte, N. C.; Barnwell Brothers, Burlington, N. C.; Branch Transportation Co., Inc., New York; Transportation, Inc., Atlanta, Ga.; Niagara Freight Lines, Buffalo, N. Y.; Adley Express, New Haven, Conn., and Rutherford Freight Lines, Bristol, Va.

## National Auto Show

Manufacturers of all passenger cars, including Ford for the first time, have made application for exhibition space at the 41st annual National Automobile Show to be held at Grand Central Palace, New York, Oct. 12 to 20. Truck exhibits will include Chevrolet, Dodge, Divco, Ford, Hudson, Plymouth, Pontiac, Studebaker and Willys.



International Harvester Co. has announced the retirement of Charles R. Morrison (left) after 42 years of service. He was vice-president in charge of sales and is succeeded by J. L. McCaffrey (right) who since '35 has been director of domestic and foreign sales.

## Getting Personal

Colonel J. Monroe John on, who as assistant Secretary of Commerce, has had charge of all transportation activities of the department, has been nominated by President Roosevelt as a Commissioner of the Interstate Commerce Commission.

Frank L. Edman, whose experience in automotive merchandising includes service with Reo, International Harvester, General Motors, Federal and Continental Motors, has been named advertising manager of Reo Motors, Inc.



R. A. Hutchinson, who was recently named to new post of vice-president and general manager, Studebaker Export Corp.

Paul Klotzsch is the new chief engineer of the automotive division of the Crosley Corp. Previous experience includes service with the Chance-Vought Corp., Fuel Oil Motors Corp., and for the past five years with Briggs Mfg. Co.

C. B. Boyne now heads the stainless steel sales activity of the Allegheny Ludlum Steel Corp., Pittsburgh. He has been with the company and its antecedents since 1913 in various clerical and sales capacities.

(MORE NEWS ON PAGE 44)

## New Truck Registrations by Makes by Months

	Auto-car	Brock-way	Chevrolet	Diamond T	Dodge	Federal	Ford	G.M.C.	Hudson	Internat'l	Mack	Plymouth	Reo	Sterling	Studebaker	White*	Willys	Misc.	Total	
January . . . . .	1940	143	117	15,997	553	4,345	153	13,282	3,142	56	5,538	572	718	11	22	85	434	173	326	45,650
January . . . . .	1939	143	127	13,615	378	4,002	85	10,188	2,384	47	4,709	482	507	168	25	169	348	88	250	37,715
February . . . . .	1940	94	92	14,145	425	4,341	113	12,092	2,724	60	5,009	425	767	4	31	101	380	182	351	41,336
February . . . . .	1939	134	98	12,007	308	3,821	79	9,224	2,218	44	4,284	398	510	159	29	143	275	97	274	34,102
March . . . . .	1940	137	123	18,398	573	5,356	161	14,993	3,457	76	6,943	534	949	6	24	154	660	233	316	53,093
March . . . . .	1939	150	168	16,565	392	4,852	122	11,886	2,772	39	5,507	493	879	175	17	190	371	148	367	45,083
Three Months . . . . .	1940	374	332	48,540	1,534	14,042	427	40,367	9,323	192	17,490	1,531	2,434	21	77	340	1,474	588	993	140,079
Three Months . . . . .	1939	427	393	42,187	1,078	12,675	286	31,298	7,374	130	14,500	1,363	1,896	502	71	502	937	333	948	116,900
% Change, Three Mos.		-13	-16	+15	+43	+11	+50	+29	+27	+48	+21	+13	+28	-96	+9	-32	+58	+77	+5	+20

\*Includes Indiana for January and February, 1940 and 1939.

# 6 YEARS OF FLEET USE PROVES

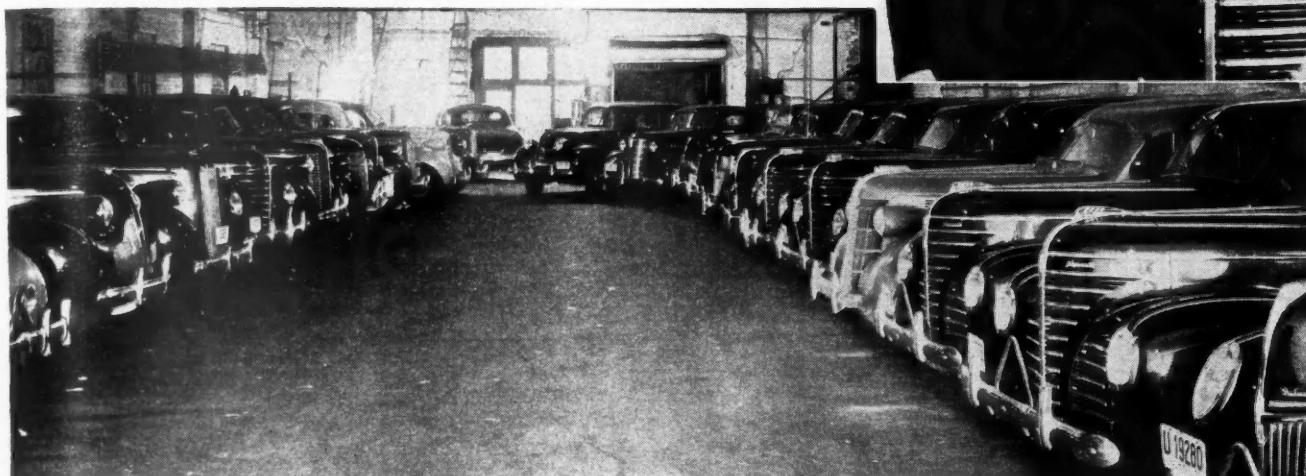
**No delay for break-in**

**No stuck valves**

**No sludge**

with  
**LUBRI-ZOL**

**says Yellow System, Detroit**



"In our business we rent cars to anybody and everybody, so that break-in on new motors is highly important if we are to get maximum service life from car engines.

"Formerly we had to break in new cars ourselves before they could be rented. We now send new cars right out to work because Lubri-Zol has entirely eliminated the break-in period. In six years of use we find our motors to be entirely free of sticky valves and crankcase sludge.

"Our records show that we have doubled mileage between oil changes. We have also eliminated hard winter starting.

"We give credit to Lubri-Zol's Special Processing for the excellent results we have obtained since using your product.

Yours very truly,

YELLOW Drive It Yourself SYSTEM, DETROIT, MICH.  
A. J. Towar, Owner

● Records like this are frequent, with Lubri-Zol Fleet Oil. The patented Lubri-Zol processing produces an extreme pressure lubricant completely effective under conditions requiring thin film lubrication. Lubri-Zol Fleet Oil is easily able to provide adequate lubrication under the high pressures and close fits of new engines. In addition Lubri-Zol has a pronounced gum solvent action and it retards sludge. Engines stay cleaner, oil circulates at the designed rate, because lubrication passageways are not choked. Also, Lubri-Zol has greater oiliness and so cuts down engine drag.

With a film strength which averages 3 times greater than the best non-processed ordinary oils, Lubri-Zol Fleet Oil can withstand the shock loads of modern traffic, maintain an unbroken oil film, and positively assure freedom from the scuffing of metal to metal contact even in the toughest fleet service.

Write to Lubri-Zol today. An experienced fleet man will call promptly. No expense—no obligation to you. The Lubri-Zol Corp., Cleveland, O.

Fully Protected by U. S. and Foreign Patents

*Buy your oil on  
the cost per mile...  
and save.. with*

**LUBRI**  
REG. U. S. PAT. OFF.

**ZOL**

## NEWSCAST

(CONTINUED FROM PAGE 42)

### Industrial Highlights

Kuhn Loeb & Co., famous New York banking house, has through its associated companies secured a substantial interest in the Willys-Overland Co. The new financial backing is expected to lend new impetus to Willys operations.

The New York Branch of Diamond T Motor Co. has moved to new headquarters at 706 Eleventh Ave. at 50th St., New York City.

Also in New York, Pines Winterfront Co.

has opened a new office at 11 West 42nd St. to facilitate service to Eastern Winterfront customers. Sid G. Harris is in charge.

But Differential Wheel Corp. is moving its New York Regional office to Detroit where it will be incorporated with the company's main office at 5124 Braden Ave.

### Correction

The Texas Co. has called attention to two errors in the Diesel Fuel Specification Table published in the April issue. The cetane number for the company's 422 Diesel Chief is 45 to 55 and distribution of 445 Diesel Chief is available "wherever the demand exists."



Studebaker has announced the appointments of three assistant regional sales managers. Left to right they are: E. W. Dalton of the New York branch; K. M. Schaefer at Philadelphia, and George Petry, Cleveland branch.

### Pedrick Adopts Camel

"Camelus bactrianus," that storied ship of the desert who can travel "more miles on a single filling," has been selected by Wilkening Mfg. Co. to effectively dramatize results attainable through the use of Pedrick Engineered Ring sets. You'll see the dapper old boy in all Pedrick advertising from now on.



### Brake Lining Tester

In Washington, the Bureau of Standards has installed a new inertia-type machine for testing brake lining. Although smaller, it is similar in operation to machines used in the industry. A heavy flywheel is brought up to the desired speed, the power is then shut off and the flywheel stopped by means of a brake mechanism which employs the lining under test. The energy absorbed per square inch of lining in stopping the flywheel is comparable to the energy absorbed in stopping an automobile. Tests of brake lining include two types of measurements: (1) Determination of the coefficient of friction of the lining under various conditions, such as when the lining is hot or cold, wet or dry; and, (2) determination of the rate of wear.



L. C. Feray, Shell Oil Co. driver, who was awarded first prize in Safe Driver Contest sponsored by International Petroleum Exposition, Tulsa.

# The All-Important Question

Body design by E. M. Westberg.

**Does It "Deliver the Goods"**

IN the design and manufacture of Hansen Hardware, first consideration is given to performance—to be sure that "it delivers the goods" in longer, more dependable service. This is insured by its simple, rugged design. As the most-used part of a body, Hardware should stand the test of continuous service. Hansen stands that test!

**No. 10** Continuous Hinge. Standard 12" lengths.  
**No. 24** Sliding Door Hanger. Roller bearings. Easy operation.  
**No. 35** Retaining Roller. Prevents rattle and play.  
**No. 45** Sliding Door Lock. Locks in open and closed position.  
**No. 71** Offset Handle. Strong. Durable. Easy to grip.  
**No. 125** Slam-and-Take-up Lock. Double-angle bolt holds doors solidly.

**ASK FOR CATALOG**

**A. L. HANSEN MFG. CO.**  
**5047 RAVENSWOOD AVE.**  
**CHICAGO, ILL.**  
 Body design by E. M. Westberg

**HANSEN**  
 THE HARDWARE FOR HARD WEAR

HANSEN  
Hardware for Commercial Bodies

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COMMERCIAL CAR JOURNAL  
JUNE, 1940

(TURN TO PAGE 46, PLEASE)



**Time and costs saved by DeVilbiss Equipment will let you do a complete maintenance job!**

• Old, worn shop equipment wastes time, inflates costs—forces your men to skimp and skip needed maintenance. Stop this hazard to profitable fleet operation with efficient, dependable DeVilbiss Equipment.

On touch-up and repaint jobs, DeVilbiss Equipment reduces sanding time—saves on material costs with greater coverage. DeVilbiss Compressors cut operating costs by delivering more air for your money—plenty of air for all services without delays. On the toughest jobs DeVilbiss Hose and Connections reduce breakage and replacements. Lubrication is faster and better with DeVilbiss Oil Guns, Hose and Compressor on the job.

Unload excessive shop overhead that keeps you skimping on maintenance. Replace old, worn service tools with time-and-cost-saving DeVilbiss Equipment.

**THE DEVILBISS COMPANY • TOLEDO, OHIO**  
Canadian Plant: WINDSOR, ONTARIO

# DEVILBISS

SERVICE EQUIPMENT

**SPRAY-PAINTING OUTFITS** for touch-up and repaint jobs. The same equipment leading bus and truck builders use.



**AIR DUSTING GUNS** for removing dust, water, metal chips; for cleaning radiator cores, gas lines.



**OIL GUNS** for high speed chassis lubrication. Spray or stream types. Hand or air operated.



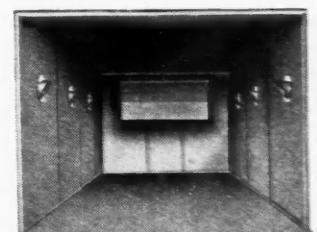
**AIR COMPRESSORS**—For all requirements.  $\frac{1}{4}$  to 10 H.P. Vertical or horizontal types. Single or two stage.



**HOSE CONNECTIONS**—Permanent or quick detachable types. Reduce breakage. Use them over again.



**HOSE FOR ALL USES**—Air, oil, water, welding, car heater. Each built for its job. Tougher, inside and out.



**SPRAY BOOTHS**—Remove dust, spray vapors. Improve finishing, and shop conditions. Lower insurance rates.

## NEWSCAST

(CONTINUED FROM PAGE 44)

### Superintendent Available

A fleet superintendent with a total of 14 years in the trucking business, seven as head of a fleet of 50 cars and trucks, is now available. He prefers the Atlantic Coast. To get in touch with him, simply address the Editor, COMMERCIAL CAR JOURNAL, Philadelphia.

### "Men Make Steel"

An air-conditioned moving picture theatre has been added to the United



This new factory enables Transportation Engineers, Inc., 14307 Third Ave., Detroit, Mich., to maintain peak production of Brooks VanEtte bodies for Ford chassis on two assembly lines.

States Steel Subsidiaries Exhibit at the New York World's Fair in order to make possible the presentation of the technicolor movie, "Men Make Steel."

"Men Make Steel" was filmed by a Hollywood crew but the actors are the men

who make steel and the scenes are scenes of actual steel operations photographed at the ore mines and inside the great mills where steel is made and rolled into finished forms. The picture, in addition to telling a story of steelmaking, presents scenes of extraordinary beauty as the technicolor camera records the brilliant colors peculiar to flashing, molten metal. The narrative accompanying "Men Make Steel" is presented by Edwin C. Hill, and the musical score, especially prepared for the picture, was recorded under the direction of Robert Armbruster.

### '39 Gas Tax at Record High

Gasoline tax revenue of the states reached a new high of \$816,433,000 in 1939, an increase of \$49,580,000 over the 1938 gasoline tax collections, the U. S. Public Roads Administration reports. Since 1933 such revenue has increased by approximately \$50,000,000 annually and levies on motor fuel now supply approximately one-quarter of all the tax revenue of the states. Annual state gasoline tax receipts now exceed in amount the annual total of all tax revenue of all the states prior to 1922.

Highest 1939 gasoline tax bill was that of New York motorists who paid the state \$69,693,000. Pennsylvania was next with \$59,584,000, followed by Ohio, \$50,466,000, and California, \$49,795,000.

### . . . As Was Gas Consumption

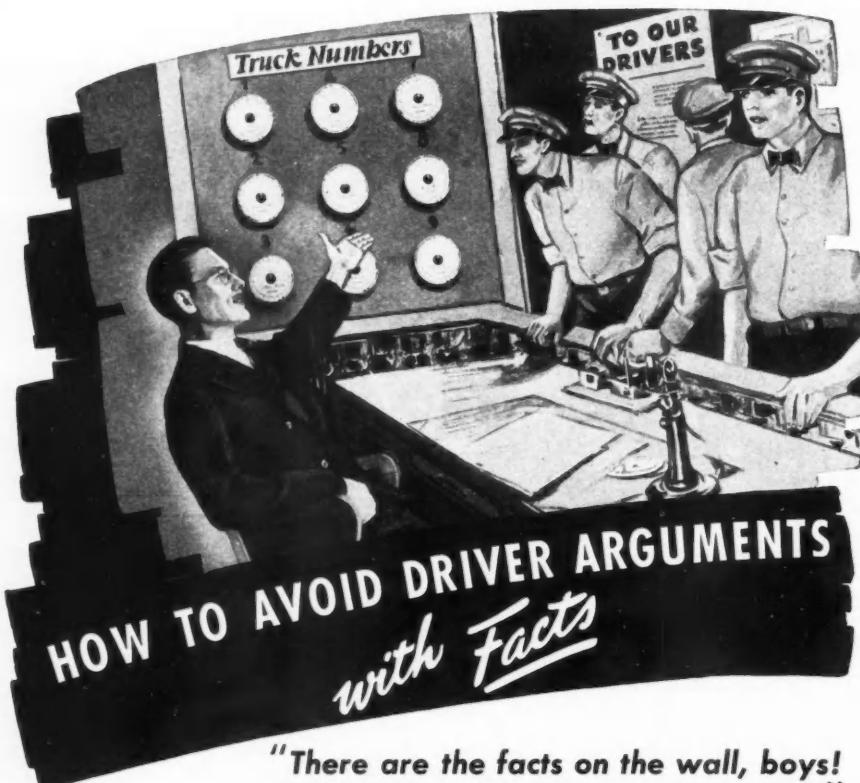
Motor-fuel consumers in eight states used more gasoline in 1939 than consumers in the other 40 states and the District of Columbia combined, recent analyses published by the U. S. Public Roads Administration and the American Petroleum Institute reveal.

These states in the order of their gas consumption were: New York, California, Pennsylvania, Illinois, Ohio, Texas, Michigan and New Jersey. Together they consumed approximately 11,400,000,000 gallons, compared with consumption for the entire country of 22,650,000 gallons. The total was 5.8 per cent higher than the 1938 demand.

### Esso Gets Turnpike Contract

Standard Oil Co. of Pennsylvania has been awarded an exclusive contract to furnish gasoline on the new Pennsylvania (toll road) Turnpike. Esso will be dispensed at 10 modern service stations to be erected at a cost of approximately \$500,000.

(MORE NEWS ON PAGE 58)



**HOW do you manage your trucks? The Easiest Way is also the most effective: "Let the trucks speak for themselves."** Let each truck "write" its own story of the day's work; and then hang the story (the chart) on a peg on the wall, up where everybody can see it.

These charts came out of Servis Recorders—they show just when each truck was running, when it left the garage, how long it waited for the load, how long it stood idle, when it quit—in fact the whole story of the day's work.

That information assures a trucking system where nobody argues, where nobody is suspicious of anybody else, where everyone is treated fairly and everyone is treated alike. It pays. Send for booklet—"Ten Ways of Getting More Work Out of Motor Trucks."

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COMMERCIAL CAR JOURNAL  
JUNE, 1940





**Diamond I**—Two-speed rear axle and special tire equipment at extra cost. **A**—Diamond II—Two-speed rear axle and special tire equipment at extra cost. **B**—Diamond III—Two-speed rear axle and special tire equipment available at extra cost. **C**—Diamond IV—Two-speed rear axle and special tire equipment optional at extra cost. **D**—Diamond V—Two-speed rear axle and special tire equipment optional at extra cost. **E**—Diamond VI—Two-speed rear axle and special tire equipment optional at extra cost. **F**—Diamond VII—Two-speed rear axle and special tire equipment optional at extra cost. **G**—Diamond VIII—Two-speed rear axle and special tire equipment optional at extra cost. **H**—Diamond IX—Two-speed rear axle and special tire equipment optional at extra cost. **I**—Diamond X—Two-speed rear axle and special tire equipment optional at extra cost. **J**—Diamond XI—Two-speed rear axle and special tire equipment optional at extra cost. **K**—Diamond XII—Two-speed rear axle and special tire equipment optional at extra cost. **L**—Diamond XIII—Two-speed rear axle and special tire equipment optional at extra cost. **M**—Diamond XIV—Two-speed rear axle and special tire equipment optional at extra cost. **N**—Diamond XV—Two-speed rear axle and special tire equipment optional at extra cost. **O**—Diamond XVI—Two-speed rear axle and special tire equipment optional at extra cost. **P**—Diamond XVII—Two-speed rear axle and special tire equipment optional at extra cost. **Q**—Diamond XVIII—Two-speed rear axle and special tire equipment optional at extra cost. **R**—Diamond XVIX—Two-speed rear axle and special tire equipment optional at extra cost. **S**—Diamond XX—Two-speed rear axle and special tire equipment optional at extra cost.

Line Number	Make and Model	WHEEL-BASE		TIRE SIZES		ENGINE DETAILS						TRANSMISSION		REAR AXLE		FRONT AXLE		BRAKES		FRAME			
		Front Wheel	Rear Wheel	Dual rear	Single rear	Displacement (cu.in.)	Number of Cylinders	Stroke	Co-relationship	Model	Main Bearing	Camshaft	Forward Spds	Model and Manufacturer	Model and Type	Service	Brake Type	Front Axle	Rear Axle	Brake Type	Front Axle	Brake Type	Frame
1	Dodge - Cont. V.H.A-45 x	920	136	220	15000	4020	6.50/20D	8.25/20	Owa	6.5	5.188	99-30000	4	21x15.5	C	60	8x10	Side Reins	C-A Dimension	M-in. Std. W.	TX		
2	(c.o.e.) V.H.A-45 x	1080	105	129	15000	4120	6.50/20D	8.25/20	Owa	6.3	5.188	99-30000	4	21x15.5	C	60	8x10	Side Reins	C-A Dimension	M-in. Std. W.	TX		
3	(c.o.e.) V.L-L-50 x	1005	105	139	20000	5550	7.50/20D	8.50/20	Owa	6.3	5.188	99-30000	4	21x15.5	C	60	8x10	Side Reins	C-A Dimension	M-in. Std. W.	TX		
4	V.L-L-50 x	1005	105	139	20000	5550	7.50/20D	8.50/20	Owa	6.3	5.188	99-30000	4	21x15.5	C	60	8x10	Side Reins	C-A Dimension	M-in. Std. W.	TX		
5	V.L-L-50 x	1152	105	150	20000	5000	7.50/20D	8.50/20	Owa	6.3	5.188	99-30000	4	21x15.5	C	60	8x10	Side Reins	C-A Dimension	M-in. Std. W.	TX		
6	V.L-L-50 x	1152	105	150	20000	5000	7.50/20D	8.50/20	Owa	6.3	5.188	99-30000	4	21x15.5	C	60	8x10	Side Reins	C-A Dimension	M-in. Std. W.	TX		
7	(D) V.L.DA-50 x	1110	152	20000	5000	7.50/20D	9.50/20	Owa	6.3	5.188	99-30000	4	21x15.5	C	60	8x10	Side Reins	C-A Dimension	M-in. Std. W.	TX			
8	(D) V.L.DA-50 x	1110	152	20000	5000	7.50/20D	9.50/20	Owa	6.3	5.188	99-30000	4	21x15.5	C	60	8x10	Side Reins	C-A Dimension	M-in. Std. W.	TX			
9	V.KL-60 x	1935	111	152	20000	6000	8.25/20D	9.50/20	Owa	6.3	5.188	99-30000	4	21x15.5	C	60	8x10	Side Reins	C-A Dimension	M-in. Std. W.	TX		
10	(D) V.KL-60 x	1935	111	152	20000	6000	8.25/20D	9.50/20	Owa	6.3	5.188	99-30000	4	21x15.5	C	60	8x10	Side Reins	C-A Dimension	M-in. Std. W.	TX		
11	(D) V.KL-60 x	1935	111	152	20000	6000	8.25/20D	9.50/20	Owa	6.3	5.188	99-30000	4	21x15.5	C	60	8x10	Side Reins	C-A Dimension	M-in. Std. W.	TX		
12	(D) V.KL-60 x	1935	111	152	20000	6000	8.25/20D	9.50/20	Owa	6.3	5.188	99-30000	4	21x15.5	C	60	8x10	Side Reins	C-A Dimension	M-in. Std. W.	TX		
13	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Con F4140	4	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	3 Tim	5152/H	SF	TX	
14	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Her QXB3F	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	4 Tim	5152/H	SF	TX	
15	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Her QXC3F	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	5 Tim	5152/H	SF	TX	
16	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Her JXAF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	6 Tim	5152/H	SF	TX	
17	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Her JXBF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	7 Tim	5152/H	SF	TX	
18	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Her JXCF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	8 Tim	5152/H	SF	TX	
19	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Her JXDF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	9 Tim	5152/H	SF	TX	
20	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	10 Tim	5152/H	SF	TX	
21	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	11 Tim	5152/H	SF	TX	
22	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	12 Tim	5152/H	SF	TX	
23	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	13 Tim	5152/H	SF	TX	
24	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	14 Tim	5152/H	SF	TX	
25	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	15 Tim	5152/H	SF	TX	
26	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	16 Tim	5152/H	SF	TX	
27	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	17 Tim	5152/H	SF	TX	
28	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	18 Tim	5152/H	SF	TX	
29	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	19 Tim	5152/H	SF	TX	
30	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	20 Tim	5152/H	SF	TX	
31	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	21 Tim	5152/H	SF	TX	
32	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	22 Tim	5152/H	SF	TX	
33	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	23 Tim	5152/H	SF	TX	
34	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	24 Tim	5152/H	SF	TX	
35	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	25 Tim	5152/H	SF	TX	
36	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	26 Tim	5152/H	SF	TX	
37	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	27 Tim	5152/H	SF	TX	
38	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	28 Tim	5152/H	SF	TX	
39	Federal (O)	595	111	128	7000	2425	6.00/16	6.50/16	Wau GMKRF	6	3.144	140	6.0	107	52-2500	3	24x44	N.WG-T89	29 Tim	5152/H	SF	TX	
40	Ford, Regular O.I.T.	596	131	184	211	4120	6.00/20S	7.50/20*	Owa	6	3.160	184	6.0	20/8	3160	3	24x44	N.Own O.I.T.	4 Tim	5152/H	SF	TX	
41	Ford, Regular O.I.T.	596	131	184	211	4120	6.00/20S	7.50/20*	Owa	6	3.160	184	6.0	20/8	3160	3	24x44	N.Own O.I.T.	5 Tim	5152/H	SF	TX	
42	Ford, Regular O.I.T.	596	131	184	211	4120	6.00/20S	7.50/20*	Owa	6	3.160	184	6.0	20/8	3160	3	24x44	N.Own O.I.T.	6 Tim	5152/H	SF	TX	
43	Ford, Regular O.I.T.	596	131	184	211	4120	6.00/20S	7.50/20*	Owa	6	3.160	184	6.0	20/8	3160	3	24x44	N.Own O.I.T.	7 Tim	5152/H	SF	TX	
44	Ford, Regular O.I.T.	596	131	184	211	4120	6.00/20S	7.50/20*	Owa	6	3.160	184	6.0	20/8	3160	3	24x44	N.Own O.I.T.	8 Tim	5152/H	SF	TX	
45	Ford, Regular O.I.T.	596	131	184	211	4120	6.00/20S	7.50/20*	Owa	6	3.160	184	6.0	20/8	3160	3	24x44	N.Own O.I.T.	9 Tim	5152/H	SF	TX	
46	Ford, Regular O.I.T.	596	131	184	211	4120	6.00/20S	7.50/20*	Owa	6	3.160	184	6.0	20/8	3160	3	24x44	N.Own O.I.T.	10 Tim	5152/H	SF	TX	
47	Ford, Regular O.I.T.	596	131	184	211	4120	6.00/20S	7.50/20*	Owa	6	3.160	184	6.0	20/8	3160	3	24x44	N.Own O.I.T.	11 Tim	5152/H	SF	TX	
48	Ford, Regular O.I.T.	596	131	184	211	4120	6.00/20S	7.50/20*	Owa	6	3.160	184	6.0	20/8	3160	3	24x44	N.Own O.I.T.	12 Tim	5152/H	SF	TX	
49	Ford, Regular O.I.T.	596	131	184	211	4120	6.00/20S	7.50/20*	Owa	6	3.160	184	6.0	20/8	3160	3	24x44	N.Own O.I.T.	13 Tim	5152/H	SF	TX	
50	One Tonner O.Y.O.	575	122	182	2120	4260	6.00/20S	8.25/20	Her QXB3G	6	3.144	182	6.0	20/8	3160	3	24x44	N.Own O.I.T.	14 Tim	5152/H	SF	TX	
51	One Tonner O.Y.O.	575	122	182	2120	4260	6.00/20S	8.25/20	Her QXB3G	6	3.144	182	6.0	20/8	3160	3	24x44	N.Own O.I.T.	15 Tim	5152/H	SF	TX	
52	Tonneur O.D.D.	540	122	182	2120	4260	6.00/20S	8.25/20	Her QXB3G	6	3.144	182	6.0	20/8	3160	3	24x44	N.Own O.I.T.	16 Tim	5152/H	SF	TX	
53	Tonneur O.D.D.	540	122	182	2120	4260	6.00/20S	8.25/20	Her QXB3G	6	3.144	182	6.0	20/8	3160	3	24x44	N.Own O.I.T.	17 Tim	5152/H	SF	TX	
54	Tonneur O.D.D.	540	122	182	2120	4260	6.00/20S	8.25/20	Her QXB3G	6	3.144	182	6.0	20/8	3160	3	24x44	N.Own O.I.T.	18 Tim	5152/H	SF	TX	
55	Tonneur O.D.D.	540	122	182	2120	4260	6.00/20S	8.25/20	Her QXB3G	6	3.144	182	6.0	20/8	3160	3	24x44	N.Own O.I.T.	19 Tim	5152/H	SF	TX	
56	Gramm	11A	695	131	185	6500	2850	7.00/16	7.50/20*	Her QXB3G	6	3.144	185	6.0	20/8	3160	3	24x44	N.Own O.I.T.	20 Tim	5152/H	SF	TX
57	Gramm	11A	695	131	185	6500	2850	7.00/16	7.50/20*	Her QXB3G	6	3.144	185</										

$\dagger$  Denotes new models or change in specifications.

Line Number	Make and Model	Chassis List Price	Wheel-base	Tire Sizes	Engine Details				Transmission		Rear Axle		Front Axle		Brakes		Frame	
					Standard	Maximum	Chassis Weight	Service Weight	Model	Model	Model	Model	Model	Model	Model	Model	Model	CA Dimension
					Front End	Rear End	Front	Rear	Model and Sp'ds	Model	Model	Model	Model	Model	Model	Model	Model	Dimensions
1 Studebaker K15	710 101 162	138	162	D-dual rear	7.50/20	35160 6.00/2098	7.50/20	7.50/20	6-3 4x4	226 6 0	170	85 3200	4 2 1/2 5/4	W.G. T-19	SP	H-5 1 -6 8	Ch. F266	
2 (e.o.e.) K15M	710 101 1200	138	162	S-single rear	7.50/20	35160 6.00/2098	7.50/20	7.50/20	6-3 4x4	226 5 8 1/2	170	80 2800	4 2 1/2 5/4	W.G. T-19	SP	H-5 1 -6 8	Ch. F266	
3 (e.o.e.) K20M	1035 1035 1035	138	162	S-single rear	7.50/20	35160 6.00/2098	7.50/20	7.50/20	6-3 4x4	226 5 8 1/2	170	80 2800	4 2 1/2 5/4	W.G. T-19	SP	H-5 1 -6 8	Ch. F266	
4 (e.o.e.) K25	1385 1385 1385	138	162	S-single rear	7.50/20	35160 6.00/2098	7.50/20	7.50/20	6-4 4x4	226 5 8 1/2	170	80 2800	4 2 1/2 5/4	W.G. T-19	SP	H-5 1 -6 8	Ch. F266	
5 (e.o.e.) K25	1385 1385 1385	138	162	S-single rear	7.50/20	35160 6.00/2098	7.50/20	7.50/20	6-4 4x4	226 5 8 1/2	170	80 2800	4 2 1/2 5/4	W.G. T-19	SP	H-5 1 -6 8	Ch. F266	
6 (e.o.e.) K25	1385 1385 1385	138	162	S-single rear	7.50/20	35160 6.00/2098	7.50/20	7.50/20	6-4 4x4	226 5 8 1/2	170	80 2800	4 2 1/2 5/4	W.G. T-19	SP	H-5 1 -6 8	Ch. F266	
7 Ward La Fr. 125	2654 200 200	187	200	8000 9.00/20D	9.75/20	Wau MZR	6-4 4x4	404 5 7	234 1/2	112-2600	7 2 5/4 12 1/2	Y Fu 5A430	SP	R 5 25-7 8	Tim 3500H			
8 Ward La Fr. 135	4460 204 215	204	215	28000 8.50/20D	10.50/20	Wau SRLR	6-4 4x4	404 5 7	234 1/2	112-2600	7 2 5/4 12 1/2	Y Fu 5A430	SP	R 5 25-7 8	Tim 3500H			
9 Ward La Fr. 135	4460 204 215	204	215	28000 8.50/20D	10.50/20	Wau SRLR	6-4 4x4	404 5 7	234 1/2	112-2600	7 2 5/4 12 1/2	Y Fu 5A430	SP	R 5 25-7 8	Tim 3500H			
10 Ward La Fr. 135	4460 204 215	204	215	28000 8.50/20D	10.50/20	Wau SRLR	6-4 4x4	404 5 7	234 1/2	112-2600	7 2 5/4 12 1/2	Y Fu 5A430	SP	R 5 25-7 8	Tim 3500H			
11 Ward La Fr. 135	4460 204 215	204	215	28000 8.50/20D	10.50/20	Wau SRLR	6-4 4x4	404 5 7	234 1/2	112-2600	7 2 5/4 12 1/2	Y Fu 5A430	SP	R 5 25-7 8	Tim 3500H			
12 Ward La Fr. 135	4460 204 215	204	215	28000 8.50/20D	10.50/20	Wau SRLR	6-4 4x4	404 5 7	234 1/2	112-2600	7 2 5/4 12 1/2	Y Fu 5A430	SP	R 5 25-7 8	Tim 3500H			
13 Ward La Fr. 135	4460 204 215	204	215	28000 8.50/20D	10.50/20	Wau SRLR	6-4 4x4	404 5 7	234 1/2	112-2600	7 2 5/4 12 1/2	Y Fu 5A430	SP	R 5 25-7 8	Tim 3500H			
14 Ward La Fr. 135	4460 204 215	204	215	28000 8.50/20D	10.50/20	Wau SRLR	6-4 4x4	404 5 7	234 1/2	112-2600	7 2 5/4 12 1/2	Y Fu 5A430	SP	R 5 25-7 8	Tim 3500H			
15 Ward La Fr. 135	4460 204 215	204	215	28000 8.50/20D	10.50/20	Wau SRLR	6-4 4x4	404 5 7	234 1/2	112-2600	7 2 5/4 12 1/2	Y Fu 5A430	SP	R 5 25-7 8	Tim 3500H			
16 Ward La Fr. 135	4460 204 215	204	215	28000 8.50/20D	10.50/20	Wau SRLR	6-4 4x4	404 5 7	234 1/2	112-2600	7 2 5/4 12 1/2	Y Fu 5A430	SP	R 5 25-7 8	Tim 3500H			
17 Warford (C) FB-19	2130 163 163	163	163	36000 10.00/20D	8.25/20	Ford V78	6-3 4x3	221 6 1/2	150	85 3800	3 2 4 5/4	7 Ford	SF	A ***-6 67	Ford RE			
18 Warford (C) FB-19	2175 163 163	163	163	36000 10.00/20D	8.25/20	Ford V78	6-3 4x3	221 6 1/2	150	85 3800	3 2 4 5/4	7 Ford	SF	A ***-6 67	Ford RE			
19 Warford (C) BC-19	2175 163 163	163	163	36000 10.00/20D	8.25/20	Ford V78	6-3 4x3	221 6 1/2	150	85 3800	3 2 4 5/4	7 Ford	SF	A ***-6 67	Ford RE			
20 Warford (C) BC-19	2175 163 163	163	163	36000 10.00/20D	8.25/20	Ford V78	6-3 4x3	221 6 1/2	150	85 3800	3 2 4 5/4	7 Ford	SF	A ***-6 67	Ford RE			
21 Willys U.S. SCOF440	330 100 100	100	100	3450 1285 132	132	Open 440	4 3 1/2 4x4	134 6 1/07	58 3600	3 2 3 5 5	W.G. T84D	S	H 4 7-5 11	Open 440				
22 Willys U.S. SCOF440	330 100 100	100	100	3450 1285 132	132	Open 440P	4 3 1/2 4x4	134 6 1/07	58 3600	3 2 3 5 5	W.G. T84D	S	H 4 7-5 11	Open 440P				
23 Autocar C-6044	6200 163 163	163	163	20000 8.00/20D	9.00/20	Own 408	6-4 4x4	408 5 15 1/4	110	2400	7 3 1/4 13 7/6	Y On-DT4-T2	8 T-W	H 7 35-8 4	T-W F501H			
24 Autocar C-6044	6200 163 163	163	163	20000 8.00/20D	9.00/20	Own 408	6-4 4x4	408 5 15 1/4	110	2400	7 3 1/4 13 7/6	Y On-DT4-T2	8 T-W	H 7 35-8 4	T-W F501H			
25 Autocar C-6044	6200 163 163	163	163	20000 8.00/20D	9.00/20	Own 408	6-4 4x4	408 5 15 1/4	110	2400	7 3 1/4 13 7/6	Y On-DT4-T2	8 T-W	H 7 35-8 4	T-W F501H			
26 Autocar C-6044	6200 163 163	163	163	20000 8.00/20D	9.00/20	Own 408	6-4 4x4	408 5 15 1/4	110	2400	7 3 1/4 13 7/6	Y On-DT4-T2	8 T-W	H 7 35-8 4	T-W F501H			
27 Autocar C-6044	6200 163 163	163	163	20000 8.00/20D	9.00/20	Own 408	6-4 4x4	408 5 15 1/4	110	2400	7 3 1/4 13 7/6	Y On-DT4-T2	8 T-W	H 7 35-8 4	T-W F501H			
28 Corbett (10) F-12	2375 100 100	100	100	14500 6.50/20D	8.25/20	Con A244	6-3 5/4x4	244 5 4 170	83 3200	4 2 3 4 6 1/2	N WG T9	8 Tim 5552H	H 5 14-6 6	W.W. F500				
29 Corbett (10) F-12	2375 100 100	100	100	14500 6.50/20D	8.25/20	Con E620	6-3 5/4x4	244 5 4 170	83 2900	4 2 3 4 6 1/2	N Clia M16C	8 Tim 5411H	H 5 14-6 6	W.W. F500				
30 Corbett (10) F-18	2375 100 100	100	100	14500 6.50/20D	8.25/20	Con E620	6-3 5/4x4	244 5 4 170	83 2900	4 2 3 4 6 1/2	N Clia M16C	8 Tim 5411H	H 5 14-6 6	W.W. F500				
31 Corbett (10) F-18	2375 100 100	100	100	14500 6.50/20D	8.25/20	Con M-330	6-4 4x4	244 5 4 170	83 2900	4 2 3 4 6 1/2	N Fu M16C	8 Tim 5411H	H 5 14-6 6	W.W. F500				
32 Corbett (10) F-23	2375 100 100	100	100	14500 6.50/20D	8.25/20	Con M-330	6-4 4x4	244 5 4 170	83 2900	4 2 3 4 6 1/2	N Fu M16C	8 Tim 5411H	H 5 14-6 6	W.W. F500				
33 Corbett (10) F-23	2375 100 100	100	100	14500 6.50/20D	8.25/20	Con M-330	6-4 4x4	244 5 4 170	83 2900	4 2 3 4 6 1/2	N Fu M16C	8 Tim 5411H	H 5 14-6 6	W.W. F500				
34 Corbett (10) F-35	2375 100 100	100	100	14500 6.50/20D	8.25/20	Con M-330	6-4 4x4	244 5 4 170	83 2900	4 2 3 4 6 1/2	N Fu M16C	8 Tim 5411H	H 5 14-6 6	W.W. F500				
35 F. W. D. H-8	2750 163 163	163	163	15000 7.00/20D	9.00/20	Wau HK	6-3 3/4x4	289 5 7 168	85 3200	7 2 4 10 1/4	Y Fu 5B33	5 Own HU	S F 7-8 5	Own HS				
36 F. W. D. H-8	2750 163 163	163	163	15000 7.00/20D	9.00/20	Wau HK	6-3 3/4x4	289 5 7 168	85 3200	7 2 4 10 1/4	Y Fu 5B33	5 Own HU	S F 7-8 5	Own HS				
37 F. W. D. H-8	2750 163 163	163	163	15000 7.00/20D	9.00/20	Wau HK	6-3 3/4x4	289 5 7 168	85 3200	7 2 4 10 1/4	Y Fu 5B33	5 Own HU	S F 7-8 5	Own HS				
38 F. W. D. H-8	2750 163 163	163	163	15000 7.00/20D	9.00/20	Wau HK	6-3 3/4x4	289 5 7 168	85 3200	7 2 4 10 1/4	Y Fu 5B33	5 Own HU	S F 7-8 5	Own HS				
39 F. W. D. H-8	2750 163 163	163	163	15000 7.00/20D	9.00/20	Wau HK	6-3 3/4x4	289 5 7 168	85 3200	7 2 4 10 1/4	Y Fu 5B33	5 Own HU	S F 7-8 5	Own HS				
40 F. W. D. H-8	2750 163 163	163	163	15000 7.00/20D	9.00/20	Wau HK	6-3 3/4x4	289 5 7 168	85 3200	7 2 4 10 1/4	Y Fu 5B33	5 Own HU	S F 7-8 5	Own HS				
41 F. W. D. H-8	2750 163 163	163	163	15000 7.00/20D	9.00/20	Wau HK	6-3 3/4x4	289 5 7 168	85 3200	7 2 4 10 1/4	Y Fu 5B33	5 Own HU	S F 7-8 5	Own HS				
42 F. W. D. H-8	2750 163 163	163	163	15000 7.00/20D	9.00/20	Wau HK	6-3 3/4x4	289 5 7 168	85 3200	7 2 4 10 1/4	Y Fu 5B33	5 Own HU	S F 7-8 5	Own HS				
43 F. W. D. H-8	2750 163 163	163	163	15000 7.00/20D	9.00/20	Wau HK	6-3 3/4x4	289 5 7 168	85 3200	7 2 4 10 1/4	Y Fu 5B33	5 Own HU	S F 7-8 5	Own HS				
44 F. W. D. H-8	2750 163 163	163	163	15000 7.00/20D	9.00/20	Wau HK	6-3 3/4x4	289 5 7 168	85 3200	7 2 4 10 1/4	Y Fu 5B33	5 Own HU	S F 7-8 5	Own HS				
45 F. W. D. H-8	2750 163 163	163	163	15000 7.00/20D	9.00/20	Wau HK	6-3 3/4x4	289 5 7 168	85 3200	7 2 4 10 1/4	Y Fu 5B33	5 Own HU	S F 7-8 5	Own HS				
46 F. W. D. H-8	2750 163 163	163	163	15000 7.00/20D	9.00/20	Wau HK	6-3 3/4x4	289 5 7 168	85 3200	7 2 4 10 1/4	Y Fu 5B33	5 Own HU	S F 7-8 5	Own HS				
47 F. W. D. H-8	2750 163 163	163	163	15000 7.00/20D	9.00/20	Wau HK	6-3 3/4x4	289 5 7 168	85 3200	7 2 4 10 1/4	Y Fu 5B33	5 Own HU	S F 7-8 5	Own HS				
48 F. W. D. H-8	2750 163 163	163	163	15000 7.00/20D	9.00/20	Wau HK	6-3 3/4x4	289 5 7 168	85 3200	7 2 4 10 1/4	Y Fu 5B33	5 Own HU	S F 7-8 5	Own HS				
49 F. W. D. H-8	2750 163 163	163	163	15000 7.00/20D	9.00/20	Wau HK	6-3 3/4x4	289 5 7 168	85 3200	7 2 4 10 1/4	Y Fu 5B33	5 Own HU	S F 7-8 5	Own HS				
50 H																		



Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE	TIRE SIZES	ENGINE DETAILS				TRANSMISSION		REAR AXLE		FRONT AXLE		BRAKES		FRAME			
					Standard and less non- standard options	Cylinders, cc.	Stroke and displacement	Main Bearings	Distributor and diameter, mm.	Torque lb.-ft.	Comp. Ratio	Dipstick mark	Model and make and drive and type	Type	Dimensions (M.I., Std. W., B.)	Slide Dimensions	Type			
♦ 1 Dia. T. 614-212H4R 806W-5327W 4R 900W-533W 4R	3895	177	234	9200	9.00/20D	9.00/20D	9.75/22	Her CBXNLD 6-4-4 X-1	20	15.9	288	86-2800	7.25 X 10 1/2	Y Clia 200V Y Clia 200V	TD	107	8 1/2 X 3 1/2	TF		
♦ 2 Dia. T. 614-212H4R 806W-533W 4R 900W-534W 4R	3895	156	234	33000	10.50/20D	9.00/20D	9.75/22	Her BXNL 6-4-4 X-1	21	14.5	300	84-2800	7.25 X 10 1/2	Y Clia 200V Y Clia 200V	TD	86	10 1/2 X 3 1/2	TF		
♦ 3 Dia. T. 614-212H4R 806W-533W 4R 900W-534W 4R	3895	156	234	50000	14.00/20D	9.00/20D	10.50/24	Her BXNL 6-4-4 X-1	21	14.5	300	84-2800	7.25 X 10 1/2	Y Clia 200V Y Clia 200V	TD	98	10 1/2 X 3 1/2	TF		
♦ 4 Dia. T. 614-212H4R 806W-533W 4R 900W-534W 4R	3895	156	234	50000	14.00/20D	9.00/20D	10.50/24	Her BXNL 6-4-4 X-1	21	14.5	300	84-2800	7.25 X 10 1/2	Y Clia 200V Y Clia 200V	TD	98	10 1/2 X 3 1/2	TF		
♦ 5 Federal	202	2F	1950	1625	2100	6450	7.50/20	Her JXBFB 6-3-3 X-1	20	16.1	1187	82-3000	7.25 X 10 1/2	Y WG 79 Y WG 79	TD	83	8 A 2 X 2 1/2	TP		
♦ 6 Federal	202	2F	1950	1625	2100	6450	7.50/20	Her JXBFB 6-3-3 X-1	20	16.1	1187	82-3000	7.25 X 10 1/2	Y WG 79 Y WG 79	TD	83	8 A 2 X 2 1/2	TP		
♦ 7 Federal	202	2F	1950	1625	2100	6450	7.50/20	Her JXBFB 6-3-3 X-1	20	16.1	1187	82-3000	7.25 X 10 1/2	Y WG 79 Y WG 79	TD	83	8 A 2 X 2 1/2	TP		
♦ 8 Federal	202	2F	1950	1625	2100	6450	7.50/20	Her JXBFB 6-3-3 X-1	20	16.1	1187	82-3000	7.25 X 10 1/2	Y WG 79 Y WG 79	TD	83	8 A 2 X 2 1/2	TP		
♦ 9 Federal	202	2F	1950	1625	2100	6450	7.50/20	Her JXBFB 6-3-3 X-1	20	16.1	1187	82-3000	7.25 X 10 1/2	Y WG 79 Y WG 79	TD	83	8 A 2 X 2 1/2	TP		
♦ 10 Federal	202	2F	1950	1625	2100	6450	7.50/20	Her JXBFB 6-3-3 X-1	20	16.1	1187	82-3000	7.25 X 10 1/2	Y WG 79 Y WG 79	TD	83	8 A 2 X 2 1/2	TP		
♦ 11 Federal	202	2F	1950	1625	2100	6450	7.50/20	Her JXBFB 6-3-3 X-1	20	16.1	1187	82-3000	7.25 X 10 1/2	Y WG 79 Y WG 79	TD	83	8 A 2 X 2 1/2	TP		
♦ 12 Federal	202	2F	1950	1625	2100	6450	7.50/20	Her JXBFB 6-3-3 X-1	20	16.1	1187	82-3000	7.25 X 10 1/2	Y WG 79 Y WG 79	TD	83	8 A 2 X 2 1/2	TP		
♦ 13 Federal	202	2F	1950	1625	2100	6450	7.50/20	Her JXBFB 6-3-3 X-1	20	16.1	1187	82-3000	7.25 X 10 1/2	Y WG 79 Y WG 79	TD	83	8 A 2 X 2 1/2	TP		
♦ 14 Federal	202	2F	1950	1625	2100	6450	7.50/20	Her JXBFB 6-3-3 X-1	20	16.1	1187	82-3000	7.25 X 10 1/2	Y WG 79 Y WG 79	TD	83	8 A 2 X 2 1/2	TP		
♦ 15 Federal	202	2F	1950	1625	2100	6450	7.50/20	Her JXBFB 6-3-3 X-1	20	16.1	1187	82-3000	7.25 X 10 1/2	Y WG 79 Y WG 79	TD	83	8 A 2 X 2 1/2	TP		
♦ 16 Federal	202	2F	1950	1625	2100	6450	7.50/20	Her JXBFB 6-3-3 X-1	20	16.1	1187	82-3000	7.25 X 10 1/2	Y WG 79 Y WG 79	TD	83	8 A 2 X 2 1/2	TP		
♦ 17 Federal	202	2F	1950	1625	2100	6450	7.50/20	Her JXBFB 6-3-3 X-1	20	16.1	1187	82-3000	7.25 X 10 1/2	Y WG 79 Y WG 79	TD	83	8 A 2 X 2 1/2	TP		
♦ 18 Federal	202	2F	1950	1625	2100	6450	7.50/20	Her JXBFB 6-3-3 X-1	20	16.1	1187	82-3000	7.25 X 10 1/2	Y WG 79 Y WG 79	TD	83	8 A 2 X 2 1/2	TP		
♦ 19 Federal	202	2F	1950	1625	2100	6450	7.50/20	Her JXBFB 6-3-3 X-1	20	16.1	1187	82-3000	7.25 X 10 1/2	Y WG 79 Y WG 79	TD	83	8 A 2 X 2 1/2	TP		
♦ 20 Federal	202	2F	1950	1625	2100	6450	7.50/20	Her JXBFB 6-3-3 X-1	20	16.1	1187	82-3000	7.25 X 10 1/2	Y WG 79 Y WG 79	TD	83	8 A 2 X 2 1/2	TP		
♦ 21 Federal	202	2F	1950	1625	2100	6450	7.50/20	Her JXBFB 6-3-3 X-1	20	16.1	1187	82-3000	7.25 X 10 1/2	Y WG 79 Y WG 79	TD	83	8 A 2 X 2 1/2	TP		
♦ 22 F.W.D.	1175	184	Op.	45000	12750	12750	1275/20	Wau RBR 6-4-5 X-1	184	16.6	3175	5175	5.369/12000/7-3/13 1/2	Y Own M Y Own M	TD	126	10 1/2 X 1 1/2	PC		
♦ 23 F.W.D.	1175	184	Op.	45000	12750	12750	1275/20	Wau RBR 6-4-5 X-1	184	16.6	3175	5175	5.369/12000/7-3/13 1/2	Y Own M Y Own M	TD	126	10 1/2 X 1 1/2	PC		
♦ 24 Hug.	98MB	4R	13000	189	80000	80000	12/24D	Wau GCA 6-4-5 X-1	20	16.1	4188	6482	4-158/1800	Y Fu 8186 Y Fu 8186	CD	77	8 1/2 X 3 1/2	T		
♦ 25 Hug.	98MB	4R	13000	189	80000	80000	12/24D	Wau GCA 6-4-5 X-1	20	16.1	4188	6482	4-158/1800	Y Fu 8186 Y Fu 8186	CD	77	8 1/2 X 3 1/2	T		
♦ 26 Hug.	98MB	4R	13000	189	80000	80000	12/24D	Wau GCA 6-4-5 X-1	20	16.1	4188	6482	4-158/1800	Y Fu 8186 Y Fu 8186	CD	77	8 1/2 X 3 1/2	T		
♦ 27 Hug.	98MB	4R	13000	189	80000	80000	12/24D	Wau GCA 6-4-5 X-1	20	16.1	4188	6482	4-158/1800	Y Fu 8186 Y Fu 8186	CD	77	8 1/2 X 3 1/2	T		
♦ 28 Hug.	98MB	4R	13000	189	80000	80000	12/24D	Wau GCA 6-4-5 X-1	20	16.1	4188	6482	4-158/1800	Y Fu 8186 Y Fu 8186	CD	77	8 1/2 X 3 1/2	T		
♦ 29 Hug.	98MB	4R	13000	189	80000	80000	12/24D	Wau GCA 6-4-5 X-1	20	16.1	4188	6482	4-158/1800	Y Fu 8186 Y Fu 8186	CD	77	8 1/2 X 3 1/2	T		
♦ 30 Hug.	98MB	4R	13000	189	80000	80000	12/24D	Wau GCA 6-4-5 X-1	20	16.1	4188	6482	4-158/1800	Y Fu 8186 Y Fu 8186	CD	77	8 1/2 X 3 1/2	T		
♦ 31 Hug.	98MB	4R	13000	189	80000	80000	12/24D	Wau GCA 6-4-5 X-1	20	16.1	4188	6482	4-158/1800	Y Fu 8186 Y Fu 8186	CD	77	8 1/2 X 3 1/2	T		
♦ 32 Hug.	98MB	4R	13000	189	80000	80000	12/24D	Wau GCA 6-4-5 X-1	20	16.1	4188	6482	4-158/1800	Y Fu 8186 Y Fu 8186	CD	77	8 1/2 X 3 1/2	T		
♦ 33 Internal	111	TD	8186	2F	1475	148	191	18000	5200	7.50/20	Own D322	6-3-4 X-1	2326/6 1/2	N Own H41A N Own H41A	RT	77	8 1/2 X 3 1/2	T		
♦ 34 Internal	111	TD	8186	2F	1475	148	191	18000	5200	7.50/20	Own D322	6-3-4 X-1	2326/6 1/2	N Own H41A N Own H41A	RT	77	8 1/2 X 3 1/2	T		
♦ 35 Internal	111	TD	8186	2F	1475	148	191	18000	5200	7.50/20	Own D322	6-3-4 X-1	2326/6 1/2	N Own H41A N Own H41A	RT	77	8 1/2 X 3 1/2	T		
♦ 36 Internal	111	TD	8186	2F	1475	148	191	18000	5200	7.50/20	Own D322	6-3-4 X-1	2326/6 1/2	N Own H41A N Own H41A	RT	77	8 1/2 X 3 1/2	T		
♦ 37 Internal	111	TD	8186	2F	1475	148	191	18000	5200	7.50/20	Own D322	6-3-4 X-1	2326/6 1/2	N Own H41A N Own H41A	RT	77	8 1/2 X 3 1/2	T		
♦ 38 Internal	111	TD	8186	2F	1475	148	191	18000	5200	7.50/20	Own D322	6-3-4 X-1	2326/6 1/2	N Own H41A N Own H41A	RT	77	8 1/2 X 3 1/2	T		
♦ 39 Internal	111	TD	8186	2F	1475	148	191	18000	5200	7.50/20	Own D322	6-3-4 X-1	2326/6 1/2	N Own H41A N Own H41A	RT	77	8 1/2 X 3 1/2	T		
♦ 40 Internal	111	TD	8186	2F	1475	148	191	18000	5200	7.50/20	Own D322	6-3-4 X-1	2326/6 1/2	N Own H41A N Own H41A	RT	77	8 1/2 X 3 1/2	T		
♦ 41 Internal	111	TD	8186	2F	1475	148	191	18000	5200	7.50/20	Own D322	6-3-4 X-1	2326/6 1/2	N Own H41A N Own H41A	RT	77	8 1/2 X 3 1/2	T		
♦ 42 Internal	111	TD	8186	2F	1475	148	191	18000	5200	7.50/20	Own D322	6-3-4 X-1	2326/6 1/2	N Own H41A N Own H41A	RT	77	8 1/2 X 3 1/2	T		
♦ 43 Internal	111	TD	8186	2F	1475	148	191	18000	5200	7.50/20	Own D322	6-3-4 X-1	2326/6 1/2	N Own H41A N Own H41A	RT	77	8 1/2 X 3 1/2	T		
♦ 44 Internal	111	TD	8186	2F	1475	148	191	18000	5200	7.50/20	Own D322	6-3-4 X-1	2326/6 1/2	N Own H41A N Own H41A	RT	77	8 1/2 X 3 1/2	T		
♦ 45 Ken.	(D) 509	4R	7046	212	254	35000	103.50	9.00/20D	9.75/22	Own H4B	4-4186	4478/12000	7-1500/1800	7-1500/1800	F	77	8 1/2 X 3 1/2	C		
♦ 46 Worth	(D) 510	2F	8639	172	254	35000	103.50	9.00/20D	9.75/22	Own H4B	4-4186	4478/12000	7-1500/18							

## Gar Wood Equipment Bulletin

Gar Wood Industries has a new bulletin which illustrates and describes new equipment including hoists, bodies, winches and cranes, as well as truck tanks and road machinery. Every piece of equipment is illustrated. Check "D" on the postcard for your copy.



... a special selection made by the editors ... to get your copy, just check the letter on the post card between pages 132 and 133 which corresponds with the item you desire and mail to Commercial Car Journal, Philadelphia.

### Dodge-Diesel Experiences

"The Experiences of Owners of Dodge-Diesel Job-Rated Trucks" is the title of a new booklet just published by the Dodge Division, Chrysler Corp. Believed to be the first compendium of actual experiences of Diesel truck owners in every section of the country, the booklet contains factual information supplied by the owners of Dodge-Diesel trucks in gold mining, oil, creamery, general freight, construction, farm products, lumber, milling and many other kinds of hauling. Subjects include: savings on fuel costs as compared with gasoline powered trucks; reduction in running time; reduction in driver cost per mile; lessened driver fatigue; safety; reduction of breakdowns on the road; improved service to shippers; goodwill. Check "A" on the post card for your copy.

### Duro Metal Products Tools

One hundred thirty-two pages of the most complete small tool catalog you ever saw have just been released by the Duro Metal Products Co., Chicago. In addition to all types of wrenches, pliers, screw drivers, etc., there are also complete lines of body and fender tools, piston ring tools and hundreds of specialized items. Check "B" on the post card for your file copy.

### U. S. Tool Catalog

Latest catalog of the United States Electrical Tool Co., Cincinnati, covers the complete line of electrical tools manufactured by this company. The line includes electric buffers, grinders, drills, heat guns, nut setters, polishers, reamer drives, sanders, saws, screw drivers, surfacers, tappers, tire retreaders, valve seat grinders and accessories. Check "C" on the post card.

### M-H Heavy-Duty Series

A new folder from the Marmon-Herrington Co. gives highlight details and general specifications of the company's DSD heavy-duty series, now available in 33 models with gross ratings up to 70,000 lb. Interested fleetmen need but check "E" on the postcard.

### Gates Fan Belt Guide

The Gates Truck and Bus Fan Belt Guide makes it easy to pick the right fan belt. All belts are identified by specifications, Gates number and vehicle manufacturer's parts number. Radiator hose listings are given as well as information on other Gates products. You get your copy by checking "F" on the postcard.

### Alan Wood Floor Plate

Alan Wood Steel Co. has published a booklet to give you the dope on rolled steel floor plate for truck floors, tail gates, running boards and steps. The booklet gives complete engineering data including patterns available. You simply check "G" on the postcard.

### Bearing Catalog

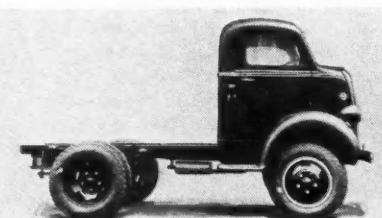
The Ahlberg Bearing Co. has just completed a 96-page catalog. It contains dimensional data on all types of ball bearings, tapered roller bearings, straight roller bearings, thrust bearings and ball bearing pillow blocks. The mounted bearing section also includes machine units, flange mountings, take-up units and hanger bearings. The engineering section contains information that designers and maintenance men alike, will find useful. Check "H" on the post card for your copy.

### Flexible Shafts and Tools

A remarkably complete catalog on flexible shafting and flexible shaft machines including a multitude of accessory attachments has been issued by Stow Mfg. Co., Inc., Binghamton, N. Y. A handy feature is a cross index reference table showing just which types are available in each size or horsepower range. Check "I" on the post card.

### Coldjet Refrigeration

Industrial Manufacturing and Engineering Co., Chicago, has compiled a new looseleaf brochure on the merits and operation of "Coldjet" truck refrigeration. Full details including mechanical specifications, and installation and operating instruction are given. The Coldjet system uses a brine solution with pump and fan operated by externally-mounted gasoline engine. Interested fleetmen should check "J" on the post card for their copy.



Marmon-Herrington all-wheel-drive conversion, now available for 101-in. Ford c.o.e. chassis, makes excellent truck-tractor unit

76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 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Transferring milk in 3000-gal. tanks from railroad flat cars to truck chassis via the Fitch system using the truck's power. Borden has 12 tanks, 12 trucks and 6 flat cars in operation. The transfer takes 90 seconds.

#### ATA Names Biow Agency

The Biow Co., New York City advertising agency has been appointed by American Trucking Associations, Inc., to handle its recently augmented public relations campaign. The Biow Co. is probably best known for its work in conjunction with Phillip Morris cigarettes which have now reached 4th place among all cigarettes.



## MARMON-HERRINGTON "HEAVY DUTY" All-Wheel-Drive TRUCKS



**TRACTION and POWER Unexcelled  
by anything on wheels...  
ON THE HIGHWAY AND OFF**

★ There are plenty of reasons why owners and operators of the largest most powerful two-wheel drive trucks (yes, and other multiple drive trucks too) are rapidly replacing these vehicles with Marmon-Herrington Heavy Duty All-Wheel-Drives.

Any multiple drive vehicle has a tremendous advantage over a two-wheel drive vehicle in extremely bad going. But MARMON-HERRINGTONS have advantages over other multiple drive trucks too, for operation "cross country" or on paved roads.

First of all, there's the greater ease of steering—and the greater safety of

driver and load in Marmon-Herrington constant velocity joint steering ends. No wheel "kick" or "fight" around curves or over the roughest kind of terrain. Then there's the forward placement of front wheels to prevent "rooting" in ditches or dips, and for better load balance. Drop frame construction provides greater stability on hills or level ground.

These are just a few of the many features of Marmon-Herrington All-Wheel-Drive superiority. Let us send literature on our complete line, which includes 33 Heavy Duty models and conversions of all standard Fords to All-Wheel-Drive in our plant. No obligation, of course. Cable Address MARTON, Indianapolis, Ind., U.S.A.

**MARMON-HERRINGTON COMPANY, INC.  
INDIANAPOLIS, INDIANA, U.S.A.**

#### 3000 Rolling Samaritans

Nearly 3000 mobile emergency first aid units are now in operation on U. S. highways, according to recent Red Cross figures, supplementing an additional 2900 fixed first aid stations. The mobile units consist mostly of cars and trucks operated by large fleet operators and manned by drivers or crews who have been trained by the Red Cross in emergency first aid administration. In the persons of these fleet sponsored Samaritans the nation has a tangible and vital asset in the cause for reduction in accident fatality.

#### Cut Accident Toll

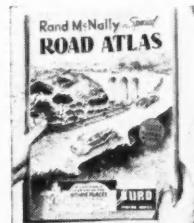
And speaking of accident reduction, hats off to 103 drivers of the Tromer Brewery organization who were awarded National Safety Council prizes last month for driving throughout the year without a single accident. Back of the results is a large scale safe-driving campaign under the direction of George B. Van Buskirk, general traffic manager.

#### Test Driver Antics

But to 41-year-old Goodrich test driver Louis Partsch goes probably the most amazing no-accident record of all. To drive 1,150,000 no-accident miles is one thing, but to do that while averaging two to three blowouts per month is another; and to do most of it in a 12-ton vehicle at high speeds with tires heavily overloaded is still another. But its all in the day's work for Louis.

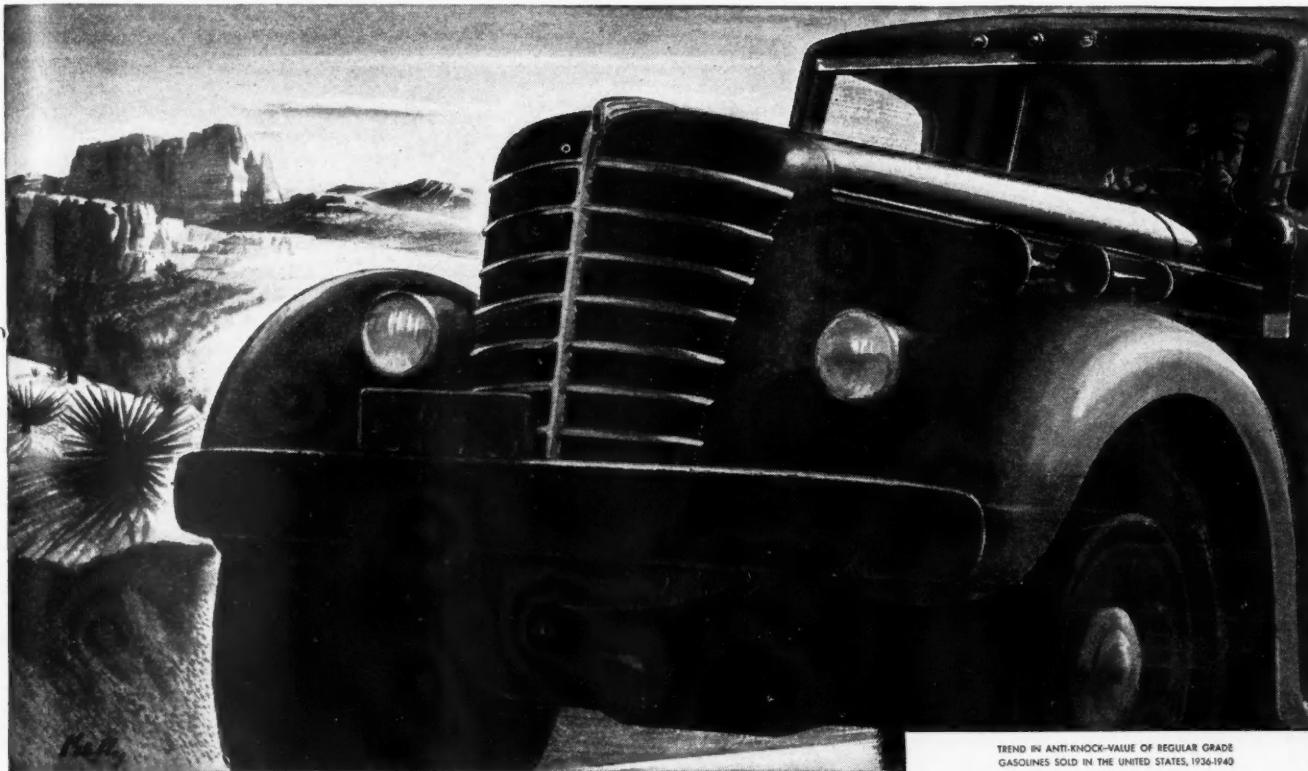
#### Free Road Atlas

A big 1940-41 edition Rand-McNally Road Atlas is offered to fleetman practically free by the Burd Piston Ring Co. The 112-page 12 x 16 in. book contains road maps of every state, the Canadian provinces and Mexico. To get it, send three box fronts from Burd "Hi-Speed" or "Super Hi-Speed" combination ring sets, plus 10 cents for postage to the Burd Piston Ring Co., Rockford, Ill.



# CLUE TO ECONOMY

*More efficient use of fuel through higher compression ratios results in 9% to 17% lower fuel consumption in 95,000-mile series of commercial vehicle tests.*



**TESTS WITH HIGH AND LOW** compression ratios in commercial vehicles, covering a two-year period, were recently completed at the San Bernardino, California, laboratory of the Ethyl Gasoline Corporation.

Every fleet owner should be interested in the facts about fuel consumption and trip time gathered from these tests.

**WHAT TESTS PROVED:** With the higher compression ratio, fuel consumption was decreased 9% to 17% with the vehicle carrying the same gross loads over identical test routes. In addition, trip time to travel various test routes was reduced 7% to 8% with the higher ratio. This would mean a substantial saving in cost of driver's time for a given trip—more goods or passengers hauled per unit of time, and therefore smaller charges against each ton mile or passenger mile for fixed costs.

**YOUR CLUE:** With the increase in the average anti-knock rating of gasoline today, many truck and bus operators reduce fuel consumption and trip time by:

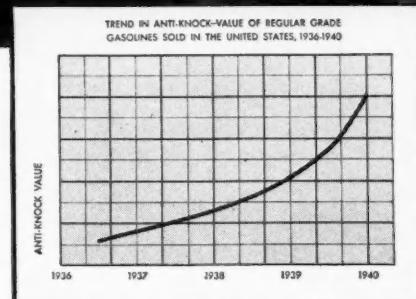
1. Installing high compression pistons or cylinder heads (as supplied by the manufacturer) in older engines when engines are overhauled or rebuilt.

2. Advancing the spark as far toward maximum power as today's better gasolines will permit in vehicles with high compression engines.

3. Investigating available compression ratios when purchasing new equipment and specifying a ratio high enough to take full advantage of modern gasoline.

Increases in performance obtained in this way may also be used to haul heavier payloads or to operate on faster or more uniform schedules.

• For detailed information as to how the tests mentioned above were made, the routes used and the results in fuel economy and time saving, send for the new, free booklet, "Results of Recent Road and Laboratory Tests on Commercial Engines." It's yours for the asking. Ethyl Gasoline Corporation, Chrysler Building, New York, N. Y., manufacturer of anti-knock fluids used by oil companies to improve gasoline.



## MAIL COUPON FOR TEST RESULTS BOOKLET

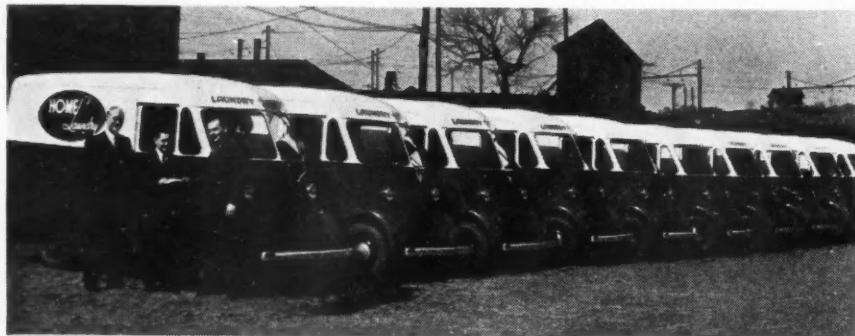
Ethyl Gasoline Corporation, Chrysler Building, New York, N. Y.

Please send me a copy of "Results of Recent Road and Laboratory Tests on Commercial Engines," which gives complete data on the San Bernardino tests.

Name \_\_\_\_\_

Address \_\_\_\_\_

CCJ-6



Home Laundry, Jersey City, N. J., takes delivery of 10 new Willys 1/2-ton trucks. At left are Max Siebelts, Willys dealer; John Miele, laundry manager, and A. W. Rosy, Siebelts' gen. mgr.

## PERFECT CONTROL



**O**il just can't run wild on the bases when pistons are fitted with Simplex "LL" multi-edged rings.

It's "one, two, three---you're out!" with old Simplex "Sim" on the mound. And if the first three don't get it, there's half a dozen more wiping-edges backing 'em up that will get it.

It's the perfect team-play of the multiple wiping-edges, that puts "oil-out" with no hits, no runs and no errors. Give them "LL" and you will get perfect oil control.

Scientifically controlled, heat-treating of each individual segment, protects the cylinder walls and safely adds long-life to the ring. If you want to get the benefit of some valuable and profitable team-work in reconditioning, call your Simplex Distributor.



SIMPLEX PRODUCTS CORP.  
3820 KELLEY AVENUE, CLEVELAND, OHIO

**SIMPLEX "LL" PISTON RINGS**  
*Do a better job - give 'em "LL"!*

### Butane-Propane Exposition

Featuring carburetors, pressure regulators, fuel tanks and other equipment for converting gasoline engines for use with butane-propane fuels, the 1st annual Pacific Coast Liquefied Petroleum Gas Exposition is expected to attract fleetmen from all parts of the country who are interested in this type of equipment.

The place is Municipal Auditorium, Santa Barbara, Cal.; the date, June 27 and 28. Full details may be secured from Liquid Petroleum Gas Association, 1625 South Alameda St., Los Angeles.

### Chevrolet Service Manual

100,000 copies of the new 282-page Chevrolet service manual covering 1940 models are currently being distributed. Explained in picture and type is every process involved in servicing the new cars. Interested fleetmen who do not receive copies of this annual reference book should communicate with Chevrolet Motor Division, General Motors Sales Corp., Detroit.

A total of 48,509 truck sales was reported by Chevrolet dealers for the first quarter of 1940, a gain of 3970 units over the same period last year.

### Delco-Remy Handbook

The sixth edition of the Delco-Remy DR-324 Operation and Maintenance handbook has just been released by Delco-Remy. This latest 144-page edition, contains factory service bulletins covering operation and maintenance of Delco-Remy electrical equipment, including the 1940



equipment and is illustrated by more than 200 pictures and diagrams. It also contains 27 pages of test specifications on Cranking Motors, Distributors, Generators, and Regulators. Available through United Motors Service, 3044 W. Grand Boulevard, Detroit. The price is \$1.00. Highly recommended!



A scene from the Barrett Service Training School, St. Louis, shows students using the Barrett truck and bus Brake Doctor while brake shoes are in position on the truck wheel. Classes, held periodically, are open to salesmen and users of Barrett equipment.

# Don't build a truck of any kind

*. . . until you get the facts  
about U·S·S COR-TEN!*



BOTH to the user and builder of trucks and trailers, U·S·S COR-TEN construction offers important money-saving advantages. Here are a few—

- COR-TEN construction is rugged.** COR-TEN is tough, strong and highly resistant to impact, vibration, wear and abrasion. Its yield point of 50,000 lbs. per sq. in., minimum—is 1½ times that of ordinary structural steel. Its deflection is about one-third that of non-ferrous "light" metals. That's why stress carrying members of COR-TEN do not have to be thick to be strong, rigid and durable.
- COR-TEN construction assures low maintenance.** In addition to its toughness and high strength, COR-TEN has 4 to 6 times greater resistance to atmospheric corrosion than plain steel. Parts subject to the attack of salt and brine, inseparable with winter operation, will last longer built of COR-TEN.
- COR-TEN fabricates and repairs easily.** Shop crews have no difficulties with COR-TEN because they are working with steel—a metal they are thoroughly familiar with. This is a point highly important to the operator who can't afford to take time out for factory repairs.
- COR-TEN saves weight at lowest cost!** COR-TEN will safely reduce weight in truck and trailer construction at an average cost of only a few cents per pound trimmed off—a fraction of the cost of reducing weight by the use of non-ferrous "light" metals.

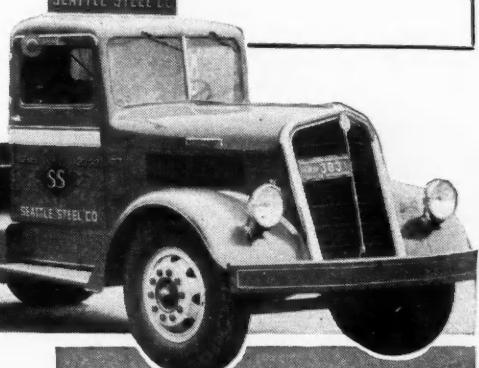
Thousands of installations made in the six years since COR-TEN was introduced prove these facts. Even more important, they have demonstrated that it is no longer necessary to pay a high premium for light weight—for increased strength—or greater durability. You can get them all, together, at low cost with COR-TEN construction.

We will be glad to show you how easily and economically COR-TEN can be applied to your designs.



**COR-TEN HERE, ASSURES STRENGTH**  
and long life. Hard working steel trucks like these take quite a beating; that's why bodies are ruggedly built of U·S·S COR-TEN. Without increasing weight, COR-TEN gives ample strength to handle 25,000 lb. loads, provides high resistance to corrosion, to wear, abrasion and loading shocks. Body fabrication by Standard Equipment Company, Seattle. Truck by Kenworth Motor Truck Corporation.

SEATTLE STEEL CO



## U·S·S HIGH TENSILE STEELS

AMERICAN STEEL & WIRE COMPANY, Cleveland, Chicago and New York  
CARNEGIE-ILLINOIS STEEL CORPORATION, Pittsburgh and Chicago  
COLUMBIA STEEL COMPANY, San Francisco  
TENNESSEE COAL, IRON & RAILROAD COMPANY, Birmingham  
NATIONAL TUBE COMPANY, Pittsburgh  
United States Steel Export Company, New York  
Scully Steel Products Company, Chicago, Warehouse Distributors

UNITED  
STATES  
STEEL

## Baker Mechanical Truck Refrigerating Unit

Of special interest to operators of refrigerated trucks is the announcement of the mechanical truck refrigerating system by the Baker Ice Machine Co., Omaha, Nebraska.

Severest test of the system has been hauling 30,000-lb. loads of butter across the Mojave Desert with outside temperatures ranging as high as 115 deg. The temperature inside the truck, remained at zero throughout the trip.

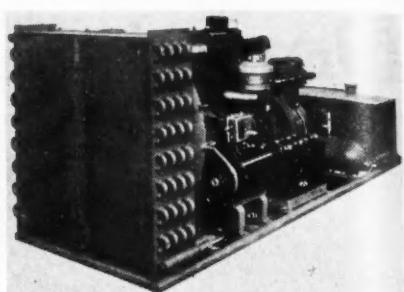
The ability to select and maintain any temperature desired, from zero to 55 deg., assures the operator of controlled refrigeration.

tion suited to all types of perishable products.

The Baker Truck Refrigerating System is composed of two parts: the power unit and the cooling unit.

The power unit consists of (1) a 4-cylinder, air-cooled gasoline engine, (2) twin-cylinder, vertical Baker freon or methyl chloride compressor, (3) 4-pass air condenser with an enclosed propeller type fan, (4) liquid receiver, (5) direct current generator, (6) heavy duty storage battery, and (7) control panel—all mounted on a steel frame which is supported by eight rubber vibration dampeners.

The engine is furnished with battery ignition. It is direct-connected to the com-



Baker self-contained power unit features a 4-cyl. gasoline engine & 2-cyl. compressor.

pressor, and is connected by V-belts to the generator and the condenser fan.

The control panel includes relays and all other automatic devices and connections necessary for automatic control of the system.

The cranking limitor limits the cranking period of the starter to prevent running down the battery and also indicates, by a visual signal, failure of the engine to start. There is a relay to operate the Solenoid unloader valve which, together with the discharge check valve, permits automatic unloading of the compressor during starting.

The control panel also mounts ammeter, high and low pressure cut out, start and stop switch, and suction and discharge service valves.

The cooling unit consists of two coils of copper tubing, and a large centrifugal type blower which is driven either by a separate electric motor or from the engine of the power unit by means of a V-belt with automatic belt adjuster. The cooling unit is enclosed in a galvanized steel housing with a removable cover. Brackets are supplied for either mounting the unit on the floor or suspending it from the ceiling.

Both the power unit and the cooling unit are located in the front of the trailer. Because of the compact design of both units, a minimum amount of space is required.

The power unit is entirely self-contained and operates whether the trailer is coupled to or removed from the tractor.

Only two simple operations are required for the driver to start the system: (1) Setting the thermostat to the temperature that is to be maintained in the truck; and (2) closing the switch on the control panel.

When the engine is started, the blower operates simultaneously with it. Air is drawn through the cooling coils and blown along the ceiling to all parts of the truck. Then it returns to the cooling coil through an opening at floor level (extending clear across the width of the truck in order to provide even distribution of the air), is cooled and forced out again to every corner of the refrigerated space. Uniform temperatures throughout the truck are thus assured.

When the truck is taken out of service at the end of the run, the driver opens the switch on the control panel.

Because of its compact design, only a minimum amount of space is required for the unit. Total weight is only 1100 lb., permitting more payload.

**"MARKED REDUCTION  
IN ACCIDENTS"**

Again Hoof Governors are credited with a major savings

That Hoof Governors protect engines from abuse is undisputed . . . that many other economies result from their accurate control is verified by the records of fleet operators in every kind of business.

What about accidents! Here, too, Hoof Governors prove their worth, reducing the number of accidents . . . or their severity, through better driving habits. A laundry fleet, operating 35 trucks, reduced insurance premiums \$20.00 a year per truck . . . \$700.00 saved yearly . . . more than twice the cost of the governors . . . yet this represents just one of the eleven savings available to Hoof Governor users.

If you would take advantage of these savings, Hoof Governors are your best buy . . . accurate, responsive, no power or acceleration loss.

**KUPPER CAB &  
RENTAL CO.**

... Peoria, all cabs Hoof Governor equipped. "Hoof Governors are responsible for marked reduction in accidents . . . drivers like them—no loss of flexible acceleration."

FOR ALL TRUCKS, CARS, BUSES, TRACTORS AND INDUSTRIAL ENGINES

HOOF PRODUCTS CO., . . . 6543 S. Laramie Ave., CHICAGO, ILL.

Makers of the FAMOUS HOOF CANTILEVER GOVERNORS.

# WALTER 4-POINT POSITIVE DRIVE

*- a match for any job*



Walter Model ADVD Tractor with Dirt Carry Scraper Combines the Speed and Mobility of a Motor Truck with the Traction and Pulling Power of a Crawler Tractor.



Walter 100% Traction is often the Only Solution to Hauling Problems in the Woods.



Walter Tractor Trucks Are Making a Name for Themselves in Coal Strip-Mining.



Road Scraping Is Another Job Where Walter Traction Does Outstanding Work.

**WALTER MOTOR TRUCK CO.**  
1001-19 IRVING AVENUE, RIDGEWOOD, QUEENS, L. I., N. Y.



One of several additions to the General Motors Truck line is the new heavy-duty chassis shown at left. It features the GM six-cylinder, two-cycle diesel engine rated at 165 hp.

## GMC OFFERS NEW 6-CYLINDER DIESEL & LIGHT MULTI-STOP

**G**ENERAL MOTORS TRUCK has placed its six-cylinder two-cycle diesel engine in a new truck model. With the 165-hp. engine, the new unit ranks among the most powerful trucks available and rounds out the GM diesel line now offered with three, four or six-cylinder engines.

Model ADC-900 syncro-mesh transmission is used in the new truck model with a low speed ratio of 5.07 to 1 with spacing of 2 between first and second,  $1\frac{1}{4}$  between second and third, and  $1\frac{3}{4}$  between third and high. An auxiliary transmission with constant mesh overdrive and underdrive gears is also available as optional equipment.

New also at this time is the baker's model. This is a multi-stop truck of 100-in. wheelbase with an overall length of  $191\frac{1}{2}$  in. and a turning

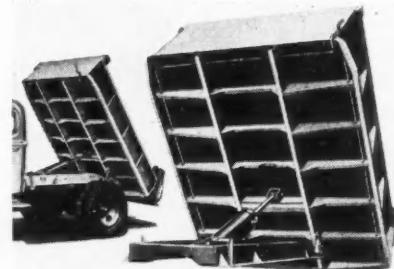
radius of  $19\frac{1}{2}$  ft. The interior load space is 108 in. long, 66 in. wide, and the floor is all flat without wheel-housings. Capacity is 285 cu. ft.

Remote door control from the driver's seat, a bus type automatic locking side door equipped with exterior concealed release and dust-tight rear doors are features of the truck. A full-width rear step incorporated with the bumper at the rear is 16 in. from the ground when the truck is loaded. The gearshift is on the steering column.

A similar model of slightly different dimensions giving 290 cu. ft. capacity is available. This model has a wheelbase of  $113\frac{1}{2}$  in. and a body load space of 112 in. by  $68\frac{1}{4}$  in. by 68 in. high. Like the other model it has a swivel seat adjustable both horizontally and vertically.

### Additions to Gar Wood Line

A new type of dump truck body featuring a patented trussed under-structure is now being manufactured by Gar Wood Industries, Inc., Detroit. The new construction design offers direct full-length support to the floor by combining longitudinals with the trussed type cross members giving a more rigid body. The new design is avail-

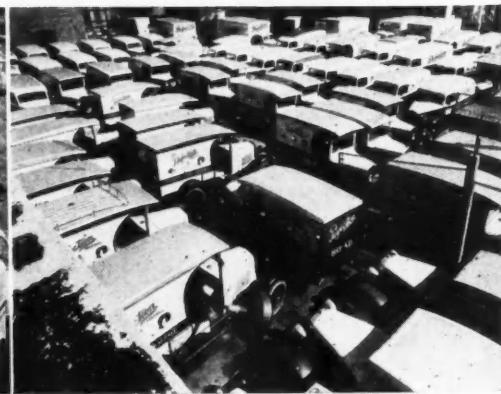


able in all types of the Gar Wood "C" line of bodies which are equipped with models D6 and D7 direct-lift underbody hydraulic hoists and F1CS patented cam and roller hoists.

The Gar Wood company has also obtained exclusive rights to manufacture and sell a tree moving crane unit for use on truck chassis, in accordance with a license agreement with coinventors Paul H. and James A. Davey, both associated with the Davey Tree Expert Co., Kent, Ohio. Called the Gar Wood "Q-D" tree moving crane, the unit is particularly suitable for  $1\frac{1}{2}$  ton truck chassis.



April 6 was blitzkrieg day for Davis Standard Bread Co., of Los Angeles, for on that day with due pomp and fanfare 214 new White Horse delivery units



(left) replaced the company's entire existing fleet (right). Most of the new trucks are short-wheelbase Model 99's, specially equipped with glass dis-

play racks for neighborhood curb-side selling. Each has a special horn which sounds off the identifying tune "This Is the Way We Back Our Bread"

# Ended by AC!



**-for 31 Years  
THE QUALITY  
SPARK PLUG**

Chevrolet, Diamond-T, Federal, GMC, International and White Trucks; Buick, Cadillac, Chevrolet, LaSalle, Nash, Oldsmobile, and Pontiac motor cars; Allis-Chalmers, Cletrac, J. I. Case, and International Harvester Tractors . . . these are some of the well-known trucks, cars, and tractors which use AC Quality Spark Plugs. Trust your spark plug requirements to the same brand of spark plugs which the leading, big-volume manufacturers select.

## X FAILURE on LONG HAULS

### WHAT HAPPENED —

(*A creamery fleet experience.*) The plugs in a certain make of truck were giving trouble on long hauls, although performance seemed satisfactory in around-the-city service. Tests were made on the long hauls with AC's. So satisfactory were the results, that this operator not only switched to AC for long runs but is now using AC's in many of his other vehicles.

### WHY AC'S SOLVED THE PROBLEM —

If the AC Heat Range were not complete, AC plugs might not have remedied the trouble. For that remedy was made possible by using plugs of exactly the right thermal characteristics for the operating conditions of the engines. AC's Heat Range is not confined to a few "hot" and a few "cold" types of plugs. It covers the whole range of temperatures required to assure satisfaction, in each thread size.

So complete is the AC Heat Range, that we've never found a spark plug trouble that AC's couldn't cure.

Standardize on AC plugs . . . select the right Heat Range . . . clean and regap every 3,000 to 4,000 miles . . . and you're sure of full satisfaction.

### AC CLEANING COMPOUND For Use in AC Spark Plug Cleaner Fast — Thorough



Specially crushed rock (not sand). Sharp edges clean quickly. Semi-softness prevents damage to plug insulator.

**Always Available from Your  
AC Wholesaler**

AC SPARK PLUG DIVISION • General Motors Corporation • FLINT, MICH.

## IGNITION

(CONTINUED FROM PAGE 33)

hermetically sealed against the entrance of moisture—the greatest single enemy of ignition coils. Moisture which enters when a coil ‘breathes’ during heating and cooling in operation, collects and ultimately causes the coil to fail. The hermetic sealing used in the modern heavy-duty coils prevents this breathing action. Oil impregnation of the winding improves

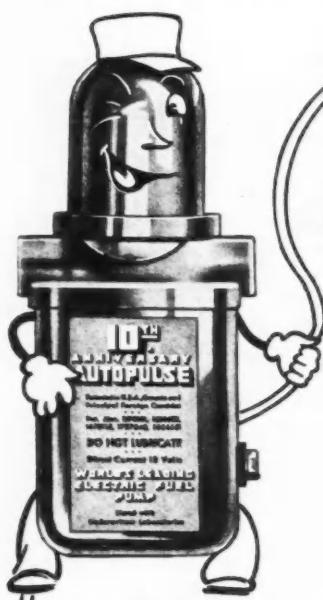
the dielectric strength of the insulation and, in conjunction with the fins cast in the coil case, permits cooler and more efficient operation of the coil. The high tension terminal is of the screw type and the head is molded from a special phenol resin compound which has extraordinary resistance against the formation of carbonized paths across the surface. Since the life expectancy of this coil is much greater than earlier coils, the fleet operator's cost per mile again is considerably lowered. Condensers

have also undergone considerable redesigning so that late heavy-duty condensers (Fig. 3) are hermetically sealed against the entrance of moisture, and heavily insulated to protect the windings from flash peaks of heat, such as exist when idling after a hard run. Here, too, the cost per mile has been reduced.

“It seems as though lower costs per mile is one of your main considerations, Mr. Arthur,” we said.

Mr. Arthur nodded. “That is a prime requisite of our design work. Ignition distributor contact points, to take another example, have been improved with that same thought in mind—reduction of the cost per mile. One of the late type contact points now available—” Here Mr. Arthur passed the contact lever arm shown in Fig. 2 across the desk to us. “—has more than twice as much tungsten in the point than earlier types, the point having been both thickened and increased in diameter. The lever arm is triple channeled—that gives it strength and rigidity combined with lightness—the same principle used on airplane structural parts. Perhaps that point doesn't look like so much,” Mr. Arthur went on deprecatingly. “But as a matter of fact we worked almost two years to find that design. We tried out dozens of sizes and shapes of lever arms, but abandoned them all after intensive laboratory tests, running them to the failure point. None quite came up to what we had in mind. You see, we

(TURN TO PAGE 68, PLEASE)

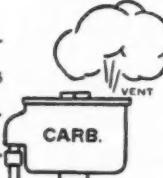


*Here's the Pump  
that TAKES YOUR  
FUEL FEED off  
the hot spot*

**AUTOPULSE** the electric pump is mounted in a cool spot away from the hot motor. It is a pusher not a sucker. Cool location is its big secret.

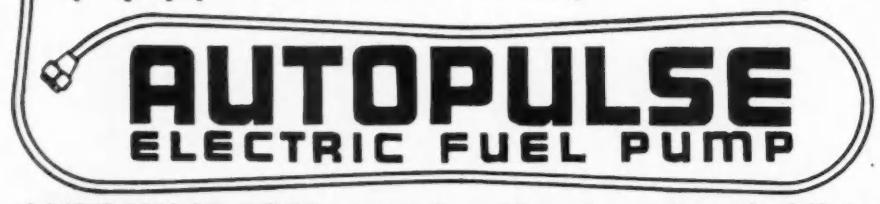


● **NO MORE VAPOR LOCK:** Costly road-failure haul-ins are a thing of the past with Autopulse, because regardless of temperature it pushes fuel in a solid cool stream to the carburetor.

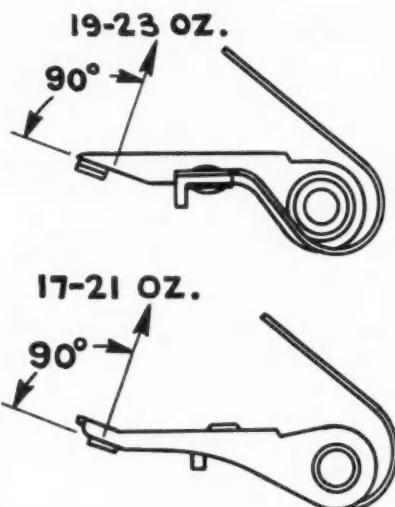


● **NO MORE FUEL WASTE:** Besides vapor-locking, hot engine mounted pumps also cause as much as 10-15% of fuel to be vented out the carburetor, and wasted. Stop this loss with Autopulse.

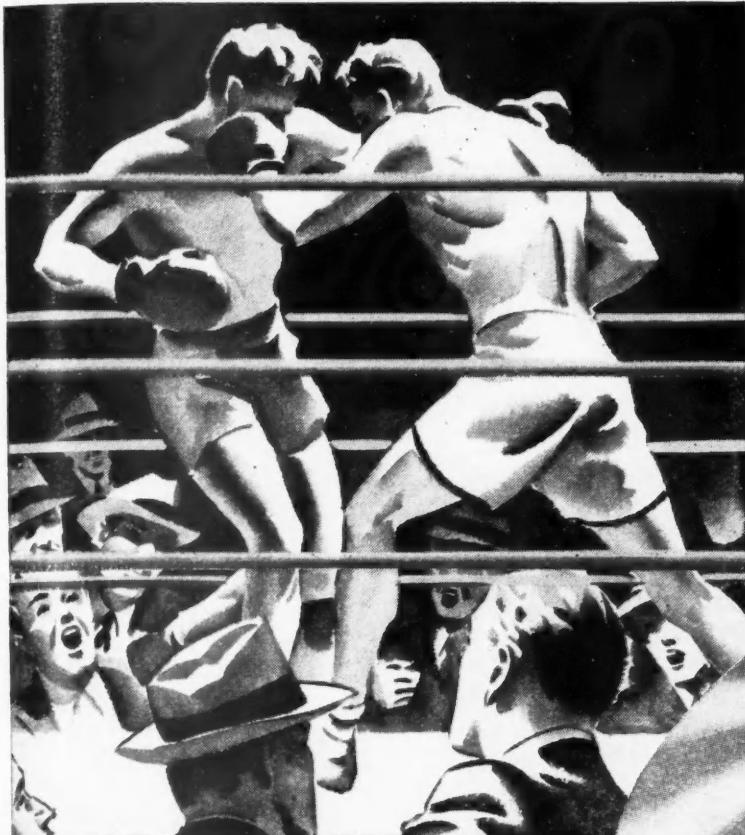
● **CHANGE-OVER!** Liberal trade-ins allowed when fleets switch pump equipment and standardize on Autopulse Electric Pumps.



**AUTOPULSE CORP., 2821 Brooklyn Ave., Detroit, Mich.**



Sketch shows proper method of checking point pressure at right angles to arm. Note greater tension specification for the heavier unit



**SEALED  
POWER  
PISTONS** T-SLOT,  
CAM-  
GROUND **LO-EX\***

*Lightweights....*  
**BUT TOUGH ENOUGH  
FOR THE  
HEAVYWEIGHT  
CLASS**



**L**IIGHT in weight—but tough! That describes accurately Sealed Power Pistons of Lo-Ex metal! And that's why fleet engineers everywhere are endorsing them, and specifying them for their trucks. Result: operating costs are cut!

Carbon formation is held to a minimum when these pistons are used. Oil consumption is likewise reduced. Lo-Ex metal, you see, has an amazingly low coefficient of expansion. This assures closer clearances. And because bearing pressures are reduced (due to the lightness of Lo-Ex) bearings last far longer.

If you have not been using Sealed

Power Pistons of Lo-Ex metal try them in your next job. Keep accurate cost records—and compare their performance with other pistons. You'll be astounded by the savings.

Look for the name "Sealed Power" in all pistons...your way of recognizing the best. Also, send for a copy of our Lo-Ex catalog showing completeness of the Sealed Power line for trucks and cars.

\*A trade mark for pistons cast and alloys produced exclusively by the Aluminum Co. of America.

**SEALED POWER CORPORATION**  
MUSKEGON, MICHIGAN  
Canadian Factory, Windsor, Ontario  
*Piston Rings, Pistons, Pins, Valves, Sleeves, Spindle  
Bolts, Bushings, Water Pumps, Tie Rods,  
Front End Parts*



long the RING leader  
now the LINE leader

(CONTINUED FROM PAGE 66)

were out to give the operator a point that would take plenty of punishment over long periods and still continue to function. Some of the points we tried worked pretty good, but we weren't quite satisfied. We were determined to make a point which would have more than double the contact material, and still not bounce or chatter in operation because of the increased mass of material. Triple channel forming did the trick. The spring is of a special alloy steel

which has great resistance against fatigue and corrosion. This arm is helping commercial vehicle operators further reduce the cost per mile of their equipment." Mr. Arthur was silent for a moment, then he continued in another vein.

"But one of the important things we haven't discussed is maintenance. Although engineers attempt to design the structures to withstand all conditions they will meet in service, and although our improved heavy-duty units effect a saving in mainte-

nance because they do not have to be checked at such frequent intervals, it is still necessary that they are checked regularly."

"What would be your thoughts on a maintenance program?" we asked. "Distributors should be lubricated at least every 2000 miles. And don't neglect to put a touch of petrolatum on the circuit breaker cam at this same mileage interval of 2000 miles—or if this is not feasible, at 5000 mile intervals at the outside. Remember it is better to lubricate frequently than to lubricate in large quantities. Over-lubrication will permit oil or grease to get on the points and cause them to gum and burn. At least once every 5000 miles the distributor cap should be removed and the cap and rotor checked for cracks or evidence of burning. The point opening and contact spring tension should be checked and the points cleaned, or replaced, and adjusted if necessary. In the March issue of COMMERCIAL CAR JOURNAL, Mr. J. T. Fitzsimmons and Mr. Herman Hartzell discussed contact point troubles in detail, and stressed the fact that today it seems points get too much attention and care. What they said on this subject is good stuff and deserves re-reading."

Mr. Arthur consulted some notes on his desk before he continued. "During this 5000 mile check the timing should also be checked, and the engine manufacturer's instructions should be followed for this. About once every 15,000 miles, the distributor should be removed from the engine and the centrifugal and vacuum advance checked and the distributor completely lubricated. And, of course, at intervals of, say 60,000 miles the distributor should be removed from the engine and completely torn down. All parts should be cleaned and worn parts replaced. This makes the distributor as good as new at a nominal cost—surely much less than a complete failure resulting from neglect would cost."

"But I would like to stress that those figures are averages—for special operating conditions and applications, the mileage intervals may be different. The operator will find it advisable to work out his maintenance schedule relative to his own operation. Now, there's one other thing I'd like to mention, and that is

(TURN TO PAGE 70, PLEASE)



## EBERHARD Dependability for COSGRAVE'S

Like many builders of high-class truck bodies, Wilson of Toronto selected Eberhard hardware for this big modern streamliner.

These doors can't work open because they are fastened with the famous Eberhard "5631" lock, shown at the left. Eberhard hinges and door holders are also incorporated in this fine example of the body builder's art.

For large or small jobs, with modernized or conventional design, you will find Eberhard fittings adaptable and economical. For complete information see your dealer or write direct to:

EBERHARD MANUFACTURING CO.  
Division of The Eastern Malleable Iron Company  
CLEVELAND, OHIO

**EBERHARD "5631"**  
**BIG VAN DOOR LOCK**

WRITE FOR THE NEW 1940 EBERHARD CATALOG



FOR SAFETY AND COMFORT RIDE THE BUS  
**ROCHESTER MOTOR COACH CO.**  
 609 PENNSYLVANIA AVENUE  
 MONACA, PA.

April 29, 1940

Hall Manufacturing Company  
 1600 Woodland Avenue  
 Toledo, Ohio

Attention: Mr. G. W. Smith.

Gentlemen:

We wish to inform you that the new valve refacer and the valve seat grinder that we have purchased from you has helped increase our gas mileage to a great extent; from eight to eleven miles per gallon. It also gives greater power and smoother running performance with 15,000 miles more per valve grinding job.

Very truly yours,  
*John E. Yoder.*

John E. Yoder  
 Superintendent of Equipment

**37½ %  
 MORE GAS  
 MILEAGE**

**15,000  
 More Miles  
 Between  
 Valve  
 Grinds**

That HALL Valve Servicing Equipment pays for itself many times over

is proven by the experience of the above Bus operator with a fleet of Internationals . . . An increase of 3 more miles per gallon is a 37½% increase; 15,000 more miles between valve grinds means lowered service costs with improved performance for thousands of extra miles . . . The HALL ECCENTRIC Valve Seat Grinder and Wet Type Valve Refacer can be equally profitable to you, too . . . See it at your Jobbers or write the factory today for complete information.

THE HALL MANUFACTURING CO.  
 1610 WOODLAND AVENUE  
 TOLEDO, OHIO



**HALL**

**SYNCHRONIZED  
 VALVE SERVICING EQUIPMENT**

(CONTINUED FROM PAGE 68)

some of the causes of distributor failure which I have analyzed and found to be the result of improper installation, or neglect of some other part of the engine. For example, torsional vibration in the distributor drive caused by loose or worn timing gears or a worn oil pump may cause rapid failure of the distributor advance mechanism. Distributors which pump oil may be doing this not through any defect of the distributor, but because the engine breather pipes have

become clogged and are causing a back pressure which is forcing oil up into the distributor. On some models of distributors designed to carry the end thrust at the bottom of the distributor pinion, care must be taken in re-installing the distributor to make sure it is pushed down solidly in the mounting well. Otherwise the normal end thrust on the distributor shaft incident to driving the distributor and oil pump will be taken inside the distributor instead of on the distributor pinion. This causes the dis-

tributor shaft to freeze in its bearing. Another condition which sometimes puzzles operators is excessive breakage of distributor lever arm springs. This usually results from a peculiar combination of circumstances. In late years operators have turned their attention more and more to the problem of clean vehicles inside and out. This is certainly a commendable thing, but in their adoption of quick engine cleaning methods, and to protect the electrical equipment, they have begun installing hoods over the distributor. This prevents distributor ventilation. High tension sparks from the rotor tip to the cap inserts in the distributor creates oxides of nitrogen which, in the presence of water, will attack insulating and metal parts and sometimes causes breakage of the lever arm spring. An attempt has been made to meet this condition in the new lever arm.

"It appears you have given us considerable material to think about, Mr. Arthur," your reporter said. "This late type arm, coil and condenser are going to be a help to fleet operators."

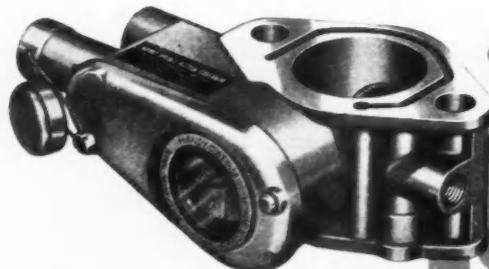
"Yes, it's all a step in the right direction. But we're not stopping. We have a huge research laboratory here, and it isn't idle. We are continuing to study the problems of ignition, using all the tools of research that science can command. We keep on searching, as always in the past, for a more perfect ignition system. If, as, and when new improvements are discovered, tested and proved, we will bring out equipment incorporating these improvements. Our justification for continued existence is based on our supplying ignition equipment which is as good as we know how to make for the applications upon which it is to be used."



**E**XCESSIVE truck speed always adds unnecessarily to the cost of fuel per truck mile. It adds to the cost of lubricant and to the cost of truck maintenance. It also increases accident hazard, which may be considerably more expensive.

The Handy Governor is one certain protection you have against incurring all these costs of excessive speed. Your trucks, equipped with Handy Governors, can go only as fast as you consider safe and economical. You can set the maximum speed where you want it and your trucks cannot possibly go any faster than the setting you make. Handy Governors are thus the cheapest type of insurance you can procure.

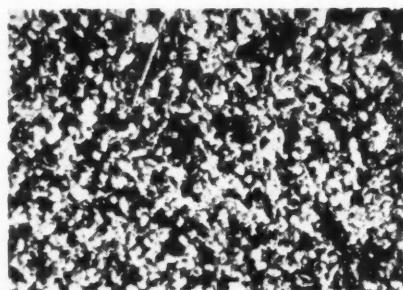
Get in touch with your Handy distributor or write us for information.



**KING-SEELEY CORPORATION**  
Ann Arbor, Michigan

World's Largest Manufacturers of  
Automotive Governors

**HANDY**  
*Visible Action*  
**GOVERNOR**



The combination of a defective air cleaner plus operation in a potato field produced the amazing carbon deposit shown in this photograph taken by the Sealed Power Corp. It's largely a solid mass of sand grains. Rings failed and pistons were badly worn.



## SOCONY-VACUUM'S *Fleet Engineering Service*

### ① WE ANSWER YOUR PROBLEM

The Socony-Vacuum Fleet Engineer analyzes your vehicles...load carried, routes, operating temperatures, exhaust gases, engine condition, maintenance methods.

He helps your men carry out money-saving operating and maintenance improvements—recommends the proper grades for your vehicles from famous Sovac Truck-Bus Oils, Mobilubes, Mobilgreases.

### ② BACKED BY 74 YEARS' EXPERIENCE

The knowledge of every Socony-Vacuum Fleet Engineer is based upon 74 years' lubrication experience—the world's greatest.

### ③ SERVICE—COAST-TO-COAST

Across the U. S. A., Socony-Vacuum Engineers are always available to work with your men in selecting the right grades of the correct lubricants for your fleet vehicles.

### CALL IN A SOCONY-VACUUM FLEET ENGINEER!

SOCONY-VACUUM OIL CO., INC. • Standard Oil of New York Division  
White Star Division • Lubrite Division • Chicago Division • White Eagle Division  
Wadham's Division • Magnolia Petroleum Company • General Petroleum  
Corporation of California



## PRIVATE POW-WOW

(CONTINUED FROM PAGE 36)

incorporating five-man cabs without going to too long wheelbases. This immediately brought up five-man cabs as a separate discussion. One group of operators favored the five-man cab without reservation because it prevents accidents on trucks where line crews have no safe place to ride and also because protection from the weather makes the men more efficient

when they get on the job. The utility men have no hope that five-man cabs will ever become a production item and therefore be available at a price comparable with the conventional cab, but even so about half of the men favored the more expensive unit.

The five-man cab was not without opposition, however. One operator said that with the comfortable quarters he had found line crews playing pinochle on cold days when they should have been working. This finding, together with the high cost of

the cab and the additional weight on the chassis, made him feel that the conventional cab was best after all.

The C.O.E. trucks were granted the usual advantages such as better maneuverability in traffic and less space used in the garage.

Temperature control came in for a pretty good going over and while it was not actually put to a vote it seemed that most fleet operators thought that means of controlling temperature should be installed at the factory and not in the field. None of the operators was willing to volunteer a guess on how much could be saved by adequate temperature control but they seemed to be steamed up about it and are confident that it is worth while.

Oil filters, the public utility operators feel, are definitely worth while. There was the usual testimony by several operators that they had found oil filters swell but the cost of cartridges too high. They said that as a result they are making their own cartridges at a fraction of purchase price with apparently satisfactory results.

The uniform classification of accounts started out as if it might lead to a good discussion, but one practical operator ended things with a thud by stating that the government told operators what would be placed in what account so what good did it do to argue about it.

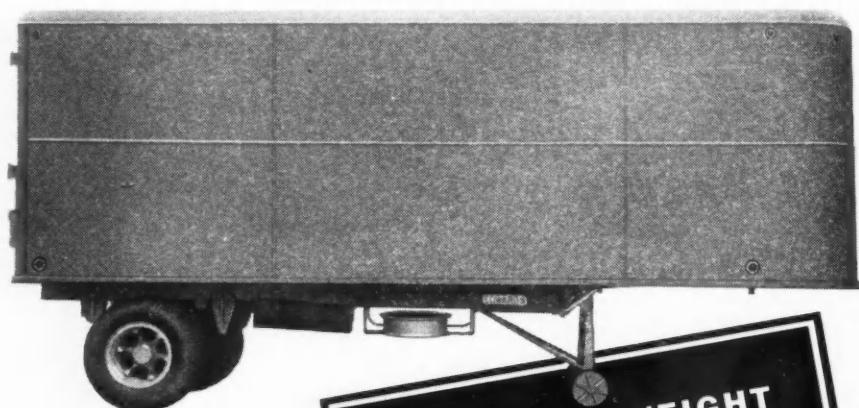
Methods of depreciation were aired and it appeared that most vehicles were depreciated on a mileage basis. In some cases the depreciation on the books is handled in groups of vehicles by location or by classification.

### Do Speedometers Jam?

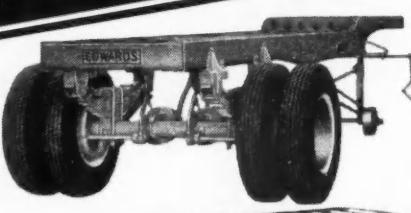
The much heralded assertion that speedometers jam in wrecked automobiles thus showing the speed at which the vehicle was traveling at the time of the crash was thrown for an authoritative loss recently when speedometer engineers of the AC Spark Plug Division were asked to comment.

"In our opinion," they said "the speedometer which is found jammed would very seldom indicate the speed at which the car was traveling at the time of impact. . . . A point where the speed cup will stop in an accident would be entirely due to the direction of the blow and the exact moment when the speedometer stopped. It would be practically impossible for the speedometer to register the speed at which the car was traveling before the accident unless the indicating hand was locked immediately prior to the time of impact which, you will agree, is a very rare possibility."

## AMAZING NEW TRAILER



**CUTS DEADWEIGHT  
without departing from  
time-proved design!**



Frame, under-body and body feature new, light-weight, extra-strong hi-tensile steel construction.

**EDWARDS**

EDWARDS IRON WORKS, SOUTH BEND, IND.

**HI-TENSILE STEEL  
SEMI-TRAILERS**

**DISTRIBUTORS - WRITE OR WIRE FOR PROFIT POSSIBILITIES**



**HC**

(HIGH COMPRESSION)

Edison HC Spark Plugs are made in all sizes for trucks and passenger cars.

## EXTREME HEAT TEST OF MEN AND SPARK PLUGS

The new engine temperatures are hotter, compressions higher, speeds greater. These conditions all hasten the destruction of old style spark plugs.

Edison has the answer! It's the new Edison HC (High Compression) Spark Plug. The one plug specially engineered to meet the extreme ignition demands of modern motors.

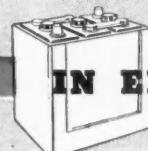
Produces more complete combustion, resulting in increased power and greater gasoline economy, because it gives a hotter spark at highest speeds; has longer life because it dissipates heat faster. Delivers more power without motor "ping." Results in surer firing.

Change to Edison HC Spark Plugs. And watch them take it. They cost no more. Try a set on your toughest job.

**EDISON-SPLITDORF CORPORATION, WEST ORANGE, N. J.**

ONE OF THE  
*Thomas A. Edison*  
INDUSTRIES

# Edison SPARK PLUGS



IN ELECTRICITY, IT'S **Edison** FROM START TO FINISH

## TOLLS, PLEASE!

(CONTINUED FROM PAGE 23)

The Turnpike is a modern, four-lane highway—two lanes in each direction—separated by a 10-foot center parkway. Each traffic lane is 12 ft. wide. Shoulders on each side are 10 ft. wide. No up-grade exceeds a maximum of 3 per cent and no down-grade is greater than 4 per cent. These grades compare with a maximum up-grade of 8 per cent on the William Penn Highway, and of 9 per cent on the Lincoln Highway.

The seven mountains encountered on the route are pierced by seven tunnels. The total length of these tunnels is 7 miles. In passing through these tunnels the highway narrows down to two 11½-ft. lanes.

The maximum curvature is 6 deg. with a radius of 995 ft. Of the total Turnpike mileage of 160.81 miles, 110 miles is on tangent, that is, a straight line.

Toll gates will be placed at 11 points of access on the route. These points, and the approximate mileages separating them, are as follows:

Middlesex to Carlisle, 2.4 miles; Carlisle to Blue Mountain, 23.5 miles; Blue Mountain to Willow Hill, 12.9 miles; Willow Hill to Fort Littleton, 9.1 miles; Fort Littleton to Breezewood, 16.6 miles; Breezewood to Bedford, 17.1 miles; Bedford to Somerset, 36.0 miles; Somerset to Donegal, 19.3 miles; Donegal to New Stanton, 15.3 miles; New Stanton to Irwin, 8.6 miles.

To enter the Turnpike at one of these so-called interchanges, the driver turns into a spur road which leads off an existing State highway. This spur connects with the East and West exit and entrance ramps. A toll booth stands athwart the spur and vehicles entering and leaving the Turnpike stop at the booth to pick up or to give up their toll tickets.

Deceleration and acceleration lanes are provided at each interchange and are 1200 ft. long. A vehicle entering the deceleration lane at 56 m.p.h. can be decelerated to the 20 m.p.h. required by the "loop."

There will be no speed limit fixed on the Turnpike except at points of maximum curvature, at points of minimum sight distances and at approaches to tunnels. Traffic regulations with respect to reckless driving, observance of warning signs, etc., will be published at all points of entry

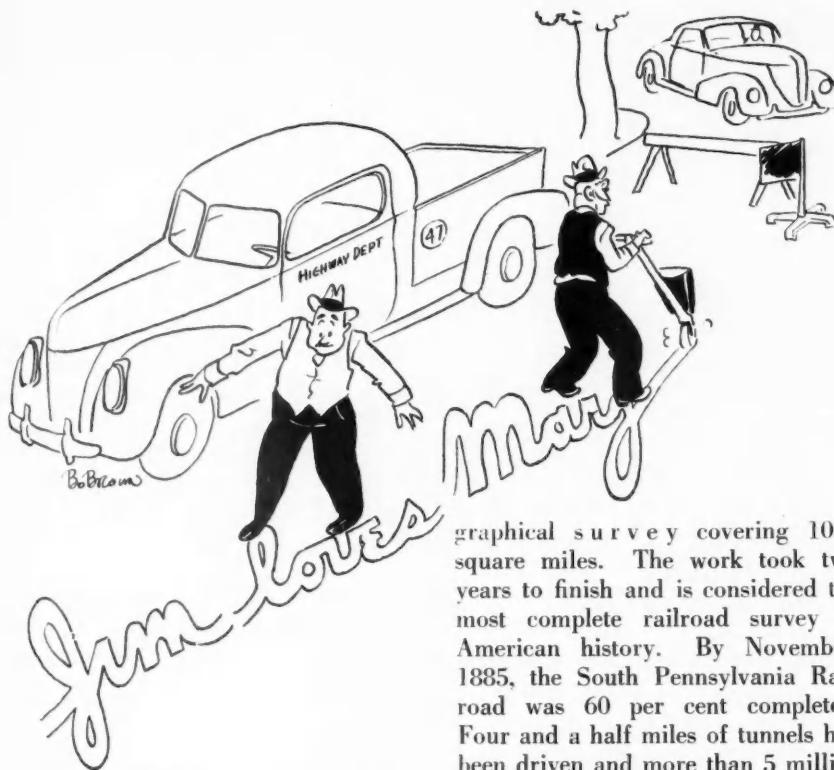
and enforced by Turnpike policemen.

In some quarters the Turnpike is considered the "yardstick" of all superhighway building in the future. Its construction is said to involve every known principle of highway building and traffic engineering. Considered a "dream" itself, it is built on a dream of the past, and already is the basis of a dream of the future.

The 200-ft. wide, 160-mile long right-of-way on which the dreamway is constructed was originally the scene of a nightmarish struggle of railroads. In 1881 the J. P. Morgan-controlled Pennsylvania Railroad threatened to enter into competition with the New York Central by purchasing a railroad in the Hudson Valley. In retaliation, William H. Vanderbilt, New York Central head, organized a company to build a railroad paralleling the Pennsylvania lines in southern Pennsylvania. Vanderbilt's biggest backer was Andrew Carnegie, the steel king, who had been fighting the Pennsy for years to get lower steel rates from Pittsburgh to the seaboard. Carnegie put up five million dollars and Vanderbilt matched him. A company was formed



# Grey-Rock



and forty millions in stocks and bonds were floated and bought by the public.

Vanderbilt sent 300 engineers into Pennsylvania, and they made a topo-

graphical survey covering 1000 square miles. The work took two years to finish and is considered the most complete railroad survey in American history. By November, 1885, the South Pennsylvania Railroad was 60 per cent completed. Four and a half miles of tunnels had been driven and more than 5 million cubic yards of grading accomplished.

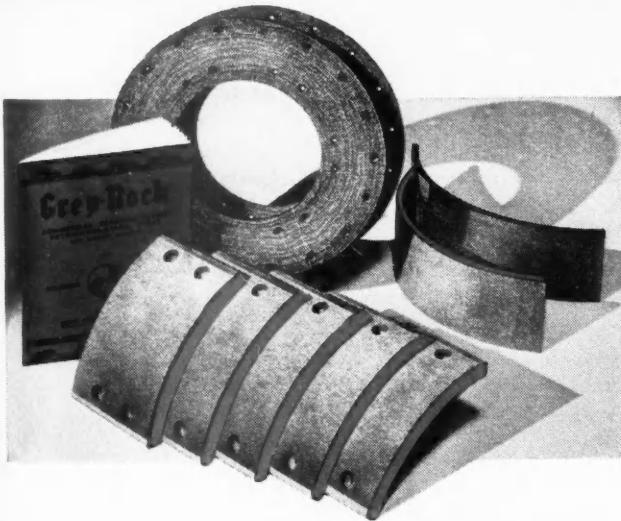
The end came suddenly. Alarmed at the prospect of a costly "rate war," Morgan prevailed upon Vanderbilt to agree to a truce. Each agreed to get

out of the other's territory. The New York Central absorbed the West Shore Line along the Hudson which precipitated the struggle, and the Pennsylvania inherited "Vanderbilt's Folly." The South Pennsylvania Railroad was dead and for 50 years weeds grew undisturbed over its grave.

Then came the dream to build the all-weather superhighway on the old South Penn road-bed. The State Legislature okayed the plan, the Federal government gave it financial support, the right-of-way passed from the hands of the Pennsylvania and Baltimore & Ohio Railroads into the possession of the Pennsylvania Turnpike Commission at a price (2 million dollars), and construction work was begun Oct. 27, 1938. The PWA fixed June 29, 1940, as the date for substantial completion of the project.

The dream of the future is that the Harrisburg to Pittsburgh Turnpike is but the first link in a nation-wide network of super-highways. A movement, activated by the Turnpike Commission, already is afoot to extend the Turnpike from its present eastern terminus on into Philadelphia.

## TO TURN A PROFIT



**Grey-Rock Rivet-On Blocks**—two types used alone or in combination to balance brakes on light trucks and buses. Grey-Rock Blocks (orange edges) medium friction, and HiWaY BloX (black edges) higher friction.

**Grey-Rock Bolt-On Blocks** for heavy truck and bus operations. Made in 5 types (G-K-R-N-Q) with varying characteristics, factory combined in sets for specific makes and models.

**Grey-Rock Recommendation Guide**, specifying combinations which balance any brake system under any load or operating condition, and providing all service information.

**Grey-Rock Vee-lok Clutch Facing**, a revolutionary V-nested endless spiral construction, setting new heavy-duty service standards.

## BALANCED TRUCK BLOCKS

UNITED STATES ASBESTOS DIVISION  
of Raybestos-Manhattan, Inc., MANHEIM, PA.  
BRAKE LININGS • CLUTCH FACINGS • FAN BELTS  
HOSE • PACKINGS • RELINING EQUIPMENT

## FAIR FLEET

(CONTINUED FROM PAGE 33)

1936. Ten of the oldest units, all station wagons, have been traded for new sedans and four new units have been added since last year, but these represent the only changes in the fleet status. In spite of the newness of the equipment a number of the units have passed the 50,000 mile mark, yet the maintenance picture presents a remarkably clean bill of health.

No new rings have been installed, only three clutches have been rebuilt in spite of the frequent stops, 10 brakes have been relined and no chronic troubles have been unearthed. Much of the credit for this clean bill of health is attributed to systematic lubrication and tune-up procedure which is performed at intervals from 700 to 1000 miles by the Fair's garage staff of four mechanics and three washers whose responsibility includes gassing, oiling, and lubrication engine tune-up and tire main-

tenance, and the maintaining of immaculate appearance performed by simple low-pressure washing whenever needed.

From the safety angle the fleet's record is also clean, with not a single pedestrian accident on the books, in spite of the overwhelming jay-walker barrage through which they are often called upon to operate. Although the fleet includes a modern wrecker, its paint has not yet been scratched and its use is confined largely to towing in disabled cars whose most frequent characteristic (routine notwithstanding) has been lack of gasoline. The accident repair bill including outside fender work has averaged less than \$30 per vehicle.

Facilities of the fleet include a modern permanent garage equipped with gas pump island, lubricating lifts and wash racks, as well as storage space for about 30 trucks. This will be a permanent part of the New York city park project which will occupy the Fair site when the fantastic colored lights fade into history.

In addition, there are temporary wooden sheds erected for truck storage during the Fair, each replete with its own uprights to provide a specialized game between architect and driver to see just how long a fender can be maintained intact. But note that there is no mechanical shop. The Fair operation is temporary, the makes and types of vehicles multitudinous, so it was felt that it would be better to go back to the dealer for such a service operations as are necessary, including engine service, body and fender work, and all other repairs requiring the use of specialized tools or equipment. The record to date would indicate that such a decision was right.

Of course there is much other trucking at the Fair. Each exhibitor or concessionaire makes his own trucking arrangements which during the Fair operating period must be completed between the hours of Fair closing and Fair opening. Exceptions include principally the food concessionaires whose mobile equipment is in the main standardized to the little package delivery trucks painted in distinctive orange and blue colors and subject to rigid size and speed regulations.

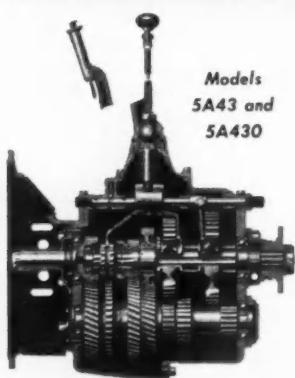
Again as last year, all foreign exhibits are handled by special arrangements.

(TURN TO PAGE 80, PLEASE)

## This Gear Increases the Pay Load and Shortens the Run



Shaving  
FULLER  
helicals



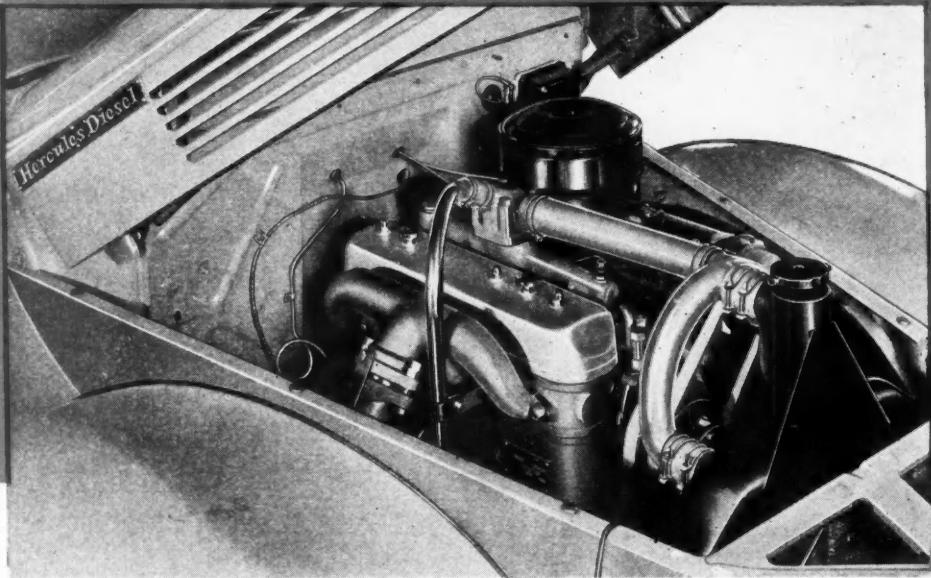
No part of a truck has a tougher, more important job to do than the gears in the transmission. Take this big helical gear. You don't see it or hear it. But out on the road it plays a vital part in helping to move big payloads faster—in reducing engine strain, cutting gas, oil and repair bills.

FULLER has spent 25 years in learning to make gears as good as this—25 years in the development of men, methods, and machines capable of producing the world's finest heavy duty transmissions.

**FULLER MFG. CO.** Kalamazoo, Mich.

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COMMERCIAL CAR JOURNAL  
JUNE, 1940



## HERCULES DIESEL ENGINES for FORD TRUCKS

EVERY month sees more and more Hercules Diesel Engines going into service — in Conventional and Cab-Over-Engine model Ford Trucks. And every day furnishes fresh proof of the extraordinary fuel economies effected by these standardized replacement units. While higher in first cost than gasoline engines of comparable size, Hercules Diesel Engines for Ford Trucks are conclusively demonstrating — in logging and lumbering operations and similar heavy-duty service as well as in inter-city and inter-state hauling — their ability to produce an excellent return on the investment where sufficient mileage is covered.

Installation of the Hercules Diesel in any conventional Ford Truck, 1935 to 1940 inclusive, and any left-hand drive Cab-Over-Engine model, is easily and quickly accomplished. The Hercules Diesel which is available in a complete "Power Package" is the identical Diesel used by Ford Motor Company in trucks for export shipment.



Write for full information — including name of nearest distributor — today. If you would like to have, in addition, a free copy of the new Hercules booklet which gives a very interesting explanation of the modern high-speed Diesel, just mention it in your post card or letter.

H E R C U L E S M O T O R S C O R P O R A T I O N  
193 Eleventh St., S.E. CANTON, OHIO, U.S.A.



(CONTINUED FROM PAGE 78)  
ment with U. S. Trucking Corp. and Motor Haulage whose bonded trucks transport the priceless cargoes of 40 foreign nations from ship to Fair destination (which is also a bonded area) without the necessity of paying import charges.

Unquestionably the largest single trucking operation during the interim between 1939 and 1940 Fairs was the removal, piece-by-piece, stone-by-stone, of the huge Russian building, Albert A. Volk & Co. and Gerosa

Haulage & Warehouse Corp. carried the principal part of the great dismantling job which included the separate crating of every stone in the building so that they might readily be reconstructed when they arrive in Moscow.

The second largest undertaking was the cleaning up of the lower end of the amusement area where seasoned fairgoers will be surprised to find many of the lower concessions gone, the huge parachute tower moved to the western end of the zone

and in their place, the great new American Jubilee, where a cast of 300 actors will perform on the world's largest revolving stage to a potential audience of 7000 customers.

Up on "Automotive Row" in the transportation area, the big exhibitors of the industry have done their part in remodeling attractions to maintain the lead in popularity which they established last year with the Fair going public in general and with members of the industry in particular.

The amazing General Motors' Futurama now has 16,000 moving miniature cars as contrasted with only 300 moving units in the 1939 exhibit. Reforestation of its more than a million trees, rehousing of its half-a-million buildings, and many new additions add new appeal to the exhibit which now includes even a family wash flapping in a 1960 breeze. For the special benefit of 1939 critics, gas stations on the super roads are now easily identifiable. At the theater across the GM full-sized intersection, the Previews of Progress Show has added new features including a "glass springboard" for the edification of visitors.

At the huge Ford pavilion, a sizeable air-conditioned theater has been added in the form of a brand new circular wing. Here scientific shows of varied natures will be headed by a remarkable ballet of motor car history from horse and buggy days entitled "A Thousand Times Neigh." Just one more cog in the group of Ford scientific wonders that entertained more visitors last year than any other exhibit at the Fair.

Capitalizing on the popularity of the renowned talking Plymouth, Chrysler Corp. has housed this exhibit in a brand new auditorium that takes its place beside the already popular three-dimensional movie theater, where visitors watch through polaroid glasses the amazing animated assembly of a Plymouth car.

For those with steady nerves and an "I-can-take-it" disposition, Goodrich has tripled the seating capacity of its thrill arena where Jimmy Lynch and his daredevil thrill drivers, with two young ladies added to this year's cast, perform their hair-raising antics on the hazard-studded track. Inside the Goodrich building virtually everything is animated.

(TURN TO PAGE 82, PLEASE)

## THORNTON Four-Rear -Wheel D R I V E

R  
A  
C



Turn a light, inexpensive truck into a husky heavy-duty giant capable of boundless traction and amazing economy. Ideal for contractors, oil field and other off-the-road operations. A completely engineered unit that puts two driving axles under the load. **SAVES 25-40% ON INVESTMENT, 30% ON OPERATION AND 35% ON UPKEEP!**

## THORNTON Automatic Locking

I  
O  
N



The THORNTON differential locks instantly and automatically, giving positive traction where the going is slippery or tough. Keeps your vehicle operating when others have to quit. **OWNER EXPERIENCE SHOWS BIG SAVINGS ON GAS, OIL, TIRES.**

## DIFFERENTIAL

stops "one-wheel spin" which causes skidding and loss of traction—the defect in the ordinary differential.

**THORNTON TANDEM CO., 8701 Grinnell Ave., Detroit, Mich.**

Please send literature on Four-Rear-Wheel DRIVE  on DIFFERENTIAL

Name ..... Company .....

Address .....

"When you need TRACTION you need THORNTON"



## A WORLD-FAMOUS TRADE MARK IDENTIFYING A LINE OF OUTSTANDING INDUSTRIAL PRODUCTS

For more than 41 years the trade-mark, "TIMKEN", has represented the hallmark of quality in tapered roller bearings. For more than 20 years it has similarly identified alloy steels and alloy steel seamless tubing. More recently it has become associated with a revolutionary development in rock drilling bits.

Wherever these products are used, their performance constantly is adding to the world-wide prestige which the trade-mark "TIMKEN" enjoys. Its presence on the products you buy is definite assurance of satisfaction.



**THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO**

Manufacturers of TIMKEN Tapered Roller Bearings for automobiles, motor trucks, railroad cars and locomotives and all kinds of industrial machinery; TIMKEN Alloy Steels and Carbon and Alloy Seamless Tubing; and TIMKEN Rock Bits.

(CONTINUED FROM PAGE 80)

At the other end of the transportation area, this year's Firestone exhibit includes a jungle hinterland which transposes the visitor direct to Liberia where Firestone operations begin. Here are depicted the processes of clearing the jungle, planting and tapping of rubber trees and related enterprises. Yet immediately adjacent to this bit of far-away Africa stands the modern Firestone tire factory where a new tire comes off the model assembly line at the rate of one

every four minutes.

And finally, although far from complete on opening day, is the brand new Highway Transportation Show located just inside the administration gate and outside the newly named Maritime, Transport and Communications Building. Sponsored by the National Motor Truck Show, Inc., and made possible through the co-operation of a group of truck manufacturers and suppliers, the show is designed to tell the story of trucks to John Q. Citizen.

With the single exception of the General Motors Diesel locomotive and the rolling stock at the Railroad show, every part of every building at the Fair and every exhibit in those buildings moved the last lap of its journey by truck. Truly trucks built the Fair. Just as truly, trucks make the Fair go! Surely such a trucking venture should have much of interest to the fleetman. Surely it does!

## LOW COSTS

(CONTINUED FROM PAGE 27)

set down in the proper columns. A column is provided also for figures obtained from the lubrication and washing reports.

The figures showing the average number of miles per gallon of gas and per quart of oil permit prompt detection of many ills. Comparison of gas consumption with the figure for the month preceding is made almost unavoidably while the figures are being set down. An abrupt rise in oil consumption brings in the offending truck for a thorough checkup and probable ring job. A gas hog is spotted in the same way and quickly weaned.

Even if the oil and gas consumption remains normal, wear and defects cannot long escape attention. The last three columns on the record card show the average operating costs per day, per mile, and per hour. An upward trend in these averages may mean that repairs are getting too heavy. If they show no improvement, the truck is replaced.

These days the accident columns on most of the cards remain blank. With the new drivers' reports eliminating the cause of mishaps, there is every likelihood that more of them will remain so.



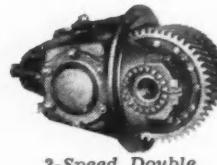
Because Timken knows how to build a 3-for-1 Axle, you get these advantages —



*Bevel Gear Drive*



*Double Reduction Drive*



*2-Speed Double Reduction Drive*

### 1 It's easy to fit the truck to the job

When you buy a truck with a Timken 3-for-1 Axle Housing, you can select from all three popular types of final drives — Bevel, Double Reduction or 2-Speed Double Reduction — all interchangeable in the same housing.

### 2 You can change-over for new jobs

When your hauling requirements change, a simple change-over from the original final drive carrier to the type with the gear ratios that suit the new job best, will keep your truck on the job — give you added months or years of service.

### 3 You benefit when you trade-in

When you trade your truck in for a new one, you get a better deal because the interchangeable final drive feature of the Timken 3-for-1 Axle broadens the market for the used truck — makes it easier to find new buyers.

# TIMKEN AXLES

The Timken-Detroit Axle Company • Detroit, Mich.  
Wisconsin Axle Division • Oshkosh, Wisconsin

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One of two dynamometer testing laboratories in which every Hoof governor is tested for performance. Here governors are also preset for road speed when this service is desired.

COMMERCIAL CAR JOURNAL

JUNE, 1940



## REVERSE OIL CONSUMPTION in your Fleet

● Here's another case of lower operating cost per mile. On round trips of 2,100 miles, this fleet owner's motors, which were reconditioned with conventional parts, used 4 quarts of oil per trip—at 10,000 miles, they were using 10 quarts of oil per trip and at 18,000 miles, piston rings had to be replaced.

Look at the difference when Nitricastiron Sleeves, Aerotype Pistons fitted with Chrome-Plated Pins and Aerotype Valves were installed. At the start, oil was consumed at the rate of 6 quarts per trip, dropped to 5 quarts at 10,000 miles—settled down to 4 from 20,000 miles up—without ring replacement. Easy savings for that fleet operator—just as easy for you. Simply install Toledo Nitricastiron Sleeves and Toledo Aerotype Parts. Call your Toledo jobber or write us direct.

### THE TOLEDO LINE IS COMPLETE

Valves and Valve Parts • Pistons: Aluminum, Cast Iron • Piston Pins: Chrome-Plated • Cylinder Sleeves • Cylinder Sleeve Assemblies • Engine Bearings • Water Pumps • Water Pump Parts • Tie Rod Ends • Chassis Bolts and Bushings • Shackles: Tryon, Silent "U" • Independent Front Wheel Suspension Parts

TOLEDO



STEEL



**1940**—Toledo Sales to date are 34.8% Ahead of 1939—the Biggest Year in Toledo History!

# TOLEDO

**THE TOLEDO STEEL PRODUCTS COMPANY • TOLEDO, OHIO, U.S.A.**

Warehouses: Atlanta • Boston • Chicago • Cincinnati • Cleveland • Dallas • Denver • Detroit • Indianapolis • Jacksonville • Kansas City • Memphis • Minneapolis • New York • Oklahoma City • Omaha • Philadelphia • Pittsburgh • Richmond • St. Louis • Wichita • Los Angeles • San Francisco • Portland • Seattle

## LEGISLATIVE LOOKOUT

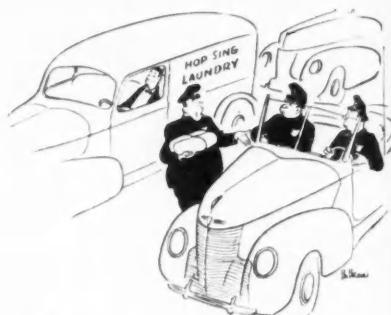
(CONTINUED FROM PAGE 17)

in Congress urging adoption of the conference report, adding to the dilemma and discomfort of the between-the-sea-and-devil position of the legislators, already in a political dither and made increasingly fidgety because of the campaign for reelection which lies immediately ahead.

The greatest single headache given sponsors of the legislation came from the change of front of one and the delayed action of the other revolting brotherhoods. It has not yet been satisfactorily explained and as a

result those who were in charge of the measure still are bewildered.

On April 29, Mr. Lee received a telegram from President A. F. Whitney, of the Order of Railway Conductors of America, advising that opposition of his organization had been eliminated since the conferees had struck out the consolidation section of the bill. Mr. Whitney added, however, that the Railway Conductors would continue "our earnest effort to obtain legal protection for labor in consolidation and abandonment situations," referring to the so-called Harrington amendment preventing any labor layoffs resulting from railroad mergers and abandonments. It was clear that at the time Mr. Whitney was relying for "labor protec-



"I give him a ticket for parking and he hands me this laundry."

tion" on a separate bill drafted by Representative Vincent Harrington, of Iowa, subsequent to the conference report. The other brotherhoods, which had insisted on the Harrington amendment apparently did not go along with Mr. Whitney, and are said to have been unwilling to trust to a separate "labor protection" bill. They wanted it incorporated in the omnibus measure. That Mr. Whitney was won over or forced to this view is manifest from his about-face.

On May 1, Mr. Whitney joined the heads of the other four operating brotherhoods in a letter to members of Congress opposing the report of the conference committee because it had struck out the "consolidation section as amended by the House." This section, the letter said, provided protection to railway men against unemployment.

"It prohibited the legalizing of consolidations or mergers which would increase fixed charges on funded debt unless the Commission should find it to be positively in the public interest to do so," it was pointed out. "This was a most important protection to the public and, indirectly, very helpful to railroad employees. The section contained also other provisions very helpful to the public and railway employees. In brief, there have been taken out of the bill the only provisions which were of direct benefit to the men actually engaged in operating railroad transportation equipment and facilities. Railway workers are, therefore, much concerned."

The labor organizations then demanded support of a motion to recommit the conference report, the motion to contain, among other things, a provision calling for reinsertion of the "consolidation section as reported by the House Committee, with an amendment to protect railway labor against unemployment." The railroad brotherhoods generously sent along a copy of the amendment which they drafted.

Though not convincing, an attempt to explain the changed attitude of Mr. Whitney has been made. It was pointed out that in his original acceptance of the bill as reported by the conference, he took occasion to add that his organization would continue its effort to obtain legal protection of labor. Yet the fact remains that there had been no change in the situation since he sent the telegram and when he joined other brotherhoods in repudiating the conference report.

In any event when the conference report was brought to the floor of the House, a joint attack on it by the railroad laborers

(TURN TO PAGE 86, PLEASE)



## The SAFE All-Glass MAZDA Lamp You've Been Waiting For

At last we can announce the first SAFE GLASEAL Driving and Passing Lamp designed especially for its use as an auxiliary lamp. Its powerful beam gives you daylight safety—approximately 3 times more light on the road. Only 30 watts. No excessive battery drain.

This lamp is not a headlight unit in a new housing, but a completely redesigned GE MAZDA GLASEAL System of correct size and power for Do-Ray's powerful new lamp. It's never out of focus, never dims from dirt or tarnish, because filament and reflector are hermetically sealed inside the unit.

The 6½" housing is of heavy chrome-plated brass, on a theft-proof malleable iron bracket. Special built-in compensating device designed to accommodate automatically any sealed beam unit regardless of variation in thickness. Available with passing or driving beam—singly or in pairs.

*Ask your Jobber  
or write*

# DO-RAY

**SAFETY LIGHTING AND REFLECTING DEVICES**  
**DO-RAY LAMP COMPANY 1458 S. Michigan Ave., Chicago**

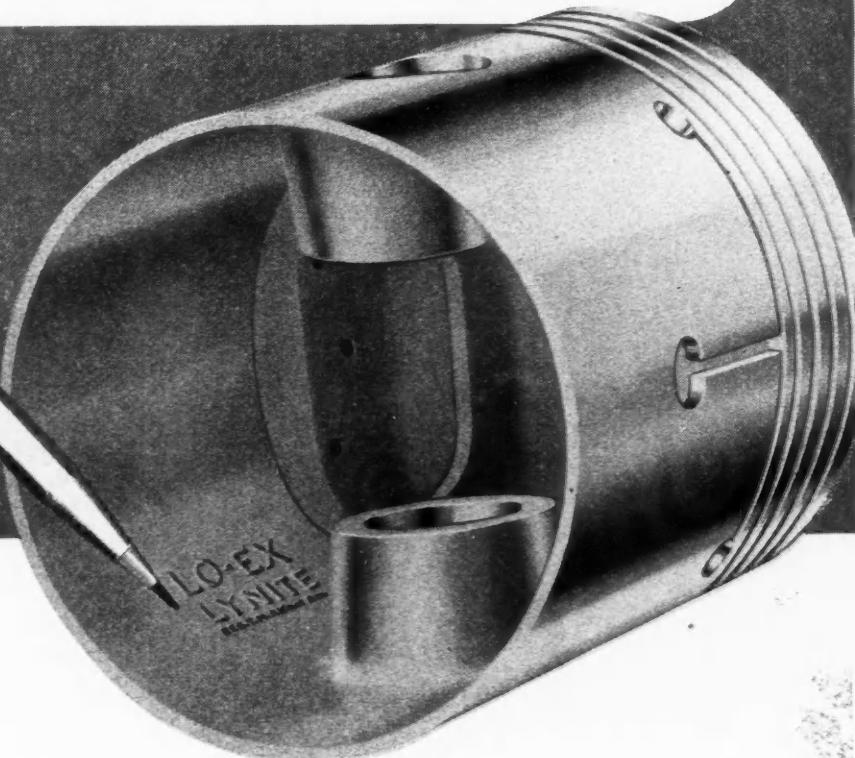
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*You'll find this trademark*  
 IN ALL  
**GENUINE LYNITE<sup>\*</sup> T-SLOT**  
**LO-EX PISTONS**

REG. U. S. PAT. OFF.

IT'S THE  
 MARK OF  
*Quality*  
 ON  
 PISTONS



FLEET OPERATORS, take this important step toward added profits. Specify that worn pistons are to be replaced with the best—Lynite T-Slot LO-EX Pistons.

Where these pistons are used, you get better performance, added economy and longer engine life. Oil and gas consumption and carbon forma-

tion are held to a minimum, reducing operating costs. Lynite T-Slot LO-EX Pistons have low coefficient of expansion, permit close clearances, provide maximum heat flow. Their lighter weight reduces bearing pressures, so bearings last longer.

ALUMINUM COMPANY OF AMERICA, 1916 Gulf Building, Pittsburgh, Pennsylvania.


\* REG. T. M., ALUMINUM COMPANY OF AMERICA

LYNITE LO-EX PISTONS — A PRODUCT OF  
**ALCOA · ALUMINUM**  
 CAST ONLY BY ALUMINUM COMPANY OF AMERICA

(CONTINUED FROM PAGE 84)  
farm-waterway groups was led by Representative Wadsworth of New York.

Following the pattern suggested in the brotherhoods' joint letter, and also reflecting the farm and waterway views, Mr. Wadsworth successfully offered a motion for recommitment. The motion instructed conferees to insist upon three amendments, which (1) would bar railroad consolidations or abandonments of service if they will result in unemployment; (2) assure agricultural exports the same reduced rail rate as those granted industrial exports; and (3) bar any carrier from cutting rates below a "compensatory return."

This strategy put the kiss of death on the

bill in its present form, at least for the present session, if not for all time. Reports have been current that the brotherhood groups were prepared to break their alliance with the farm and waterway blocks, join with rail labor organizations favoring the conference report and make another effort to restore the modified Harrington "labor protection" amendment alone. But whatever foundation there may be for the report it is doubted that such a move would succeed. Members of Congress from agricultural and waterway districts, it is argued, obviously would not take their political lives in hand by running out on waterway and farm interests, whose votes to such members are much more important than

those of rail labor. At the same time the railroad brotherhoods apparently estimate that the House vote of 182 against recommitment is the minimum of the strength they could muster and that by control of some 15 or 20 additional votes they would carry the day in the House and that done it would be simple to do likewise in the Senate.

With the ditching of the bill went amendments providing for changes in the Motor Carrier Act. Outstanding was an amendment supported by the National Association of Railroad and Public Commissioners. This amendment directed the Interstate Commerce Commission to exempt from federal regulation the interstate transportation by motor carriers operating on intrastate routes where the operation does not substantially affect or impair uniform regulation provided the exempted carrier is not a burden upon interstate commerce for a state to regulate.

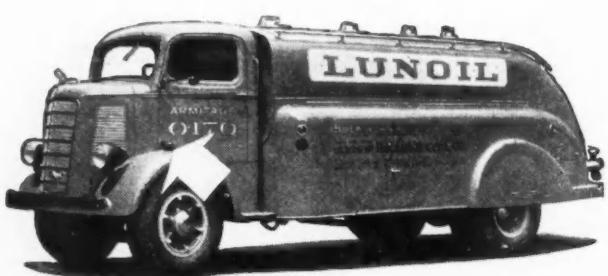
Another amendment directed the Commission to expedite its investigation regarding the need for federal regulation of the sizes and weights of motor vehicles and to report its findings at the "earliest practicable date" to Congress. This was really nothing more than a formal legislative expression since the Commission has pushed its inquiry and will report to Congress at an early date.

The bill also expanded Motor Carrier Act provisions barring dual operations under certificates and permits, except with ICC consent, and to include not only a particular motor carrier but also any person "controlling, controlled by, or under common control with such carrier." Prevailing provisions with respect to reports on motor carrier accidents to or by the Commission would have been changed to stipulate that such reports shall not be admitted as evidence in connection with suits for damage. Another amendment provided that hereafter contract-carrier schedules would have to show minimum rates "actually maintained and charged" while contract-carrier contracts would not be made public unless the Commission considered such action in the public interest. Provision also was made to increase from 180 days to seven months the maximum period for Commission suspension of tariffs of common carriers and schedules of contract carriers.

#### Federal Highway Act of 1940

A new Federal Highway Bill (H. R. 9575), introduced recently by Chairman Cartwright of the House Roads Committee, would restore Federal Road authorizations to 1938-39 levels and would reach an annual total of \$238,000,000 in 1942 and 1943. This compares with \$158,500,000 in 1940 and a proposed \$191,000,000 in 1941.

The bill includes authorization of the purchase of adjacent strips of land for the preservation of natural beauty. Expenditures for this purpose, however, are limited to five per cent of the state apportionment. The Commissioner of Public Roads is further authorized to give technical aid and advice in connection with the location and development of "Flight strips" adjacent to the highways for the landing and take-off of aircraft.



## YOUR NEW MACK TRUCKS WILL GIVE YOU THIS EXTRA *Vital* PROTECTION

As a matter of operating safety, more and more automotive manufacturers are recognizing the importance of directional signals as standard equipment. Among fleets as well as manufacturers "Connecticut" is the choice, because of . . .

- . . . clearer and farther visibility, day or night, fair weather and foul
- . . . unfailing operation at all times
- . . . the greatest possible safety under modern traffic conditions
- . . . non-reflecting, unbreakable face that prevents false signaling by reflected light
- . . . non-clogging, non-fouling lens construction

**CONNECTICUT**  
Telephone and Electric  
**CORPORATION**  
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## NOW is the time to equip **YOUR** fleet while these sensationallly **LOW PRICES** prevail!

"BULLET" Model



**NOTE:** Hein-Werner also makes the WHITE SADDLE line of HYDRAULIC SERVICE JACKS for jobs up to and including 4 tons . . . Ask your H-W jobber, or write us for details on complete line including the new SAFE-T's in 5 and 10 ton capacities.

No other manufacturer has ever built better hydraulic jacks and offered them at prices lower than Hein-Werner.

All H-W Hydraulic Jacks are scientifically engineered so that they are compact, powerful and easy to operate. They are factory tested at 1½ times their rated capacity, and are **SAFE**.

Check-up today! If any truck in your fleet lacks a complete jack, or has an old, broken or slow acting jack, you'll save time and money by immediately arranging to replace the old jack with a new Hein-Werner Hydraulic Jack.

All models in this complete line are great values. They set the standard for comparison, and are the logical preference of thousands of fleet operators . . . Bullet model, 1½ tons capacity is only \$2.80 . . . 2 ton light truck special is \$2.95 . . . 3 ton models, \$6.95 . . . 5 tons, \$8.95 . . . 8 tons, \$11.75 . . . 12 tons, \$17.50 . . . 20 tons, \$30.00 (West Coast prices are slightly higher) . . . Consult your H-W jobber, or write us for full information. Don't delay! Act today!

**HEIN-WERNER MOTOR PARTS CORP.**  
Waukesha, Wisconsin

FEW MODELS ENGINEERED TO DO THE WORK OF MANY  
**HEIN-WERNER**  
*hydraulic* JACKS

**Diamond T Announces a  
New Cab-Forward Model**

Announcement of a new and larger Diamond T in the cab-forward style makes three sizes available in this type. The latest addition, known as Model 509SC, carries a nominal rating of 2-3½ tons and a gross rating of 14,700 lb. Chassis price is \$1,360.

Like the two smaller units in the Diamond T Cab-Forward line, the new model saves almost three feet of wheelbase over conventional models with no appreciable loss of load space.

One of the first of the new larger Diamond T cab-forward models, already in service for a paper distributor.



# BRING 'EM BACK ALIVE



To protect lives and property your trucks need safe, sure brakes. To save maintenance they need the longest wearing linings you can get. Ferodo Blocks and Segments give you a combination of safety and saving that only forty years' experience can build into such materials. Ferodo Brake Blocks supplied ¾" thick and up do not fade even under enormous, prolonged braking pressure and extreme temperatures. They are molded of a special friction compound under hydraulic pressure of more than 650 tons. Write us for full details.

**FERODO AND ASBESTOS, INCORPORATED, NEW BRUNSWICK, N. J.**

## PRIVATE CARRIERS

(CONTINUED FROM PAGE 27)

limits of a single state and yet be engaged in interstate and foreign commerce. If, for example, a company which has a manufacturing plant located in an inland city in any state, transports property by motor vehicle to a port in the same state for further transportation by steamship to a foreign port or to a port in another state, such motor vehicle would clearly be engaged in interstate or foreign commerce. The same would be true of transportation to or from a rail head where the property so transported originated at or was destined to a point in another state and its ultimate destination was at all times intended by the shipper."

Exemptions and changes approved by the Commission are as follows:

### FARM TRUCKS

"Persons between the ages of 18 and 21" may drive a farm truck which does not exceed a gross weight of 10,000 lb. This is an exception to Rule 1.28 of Part 1.

Farm truck drivers are not required to take a physical examination before being permitted to operate a farm truck. This is an exception to Rule 1.31 of Part 1. Other rules pertaining to qualifications of drivers do apply.

Farm trucks are exempted from the no-passenger rule. This is an exception to Rule 2.6 of Part 2.

Farm truck drivers are not restricted to a maximum daily on-duty period. This is an exception to Rule 3 (b) of Part 5. However, farm truck drivers may not drive for more than 50 hours in any one week. These

(TURN TO PAGE 90, PLEASE)



*Hauls more -  
Weighs less - Lasts longer*

BECAUSE IT'S MADE OF

# REPUBLIC DOUBLE STRENGTH STEEL

• It's good business to swap a pound of dead-weight for a pound of pay load. It helps make dividends.

The user of this dump truck, made of Republic Double Strength Steel, reports that the lighter weight of the body materially increased its hauling capacity while the greater strength and improved resistance to corrosion and abrasion enabled them to show a service life two to three times greater than with the non-alloy material previously used.

Republic Double Strength Steel is a low-cost alloy with characteristics that are extremely profitable to both body builders and buyers. It is ductile enough for easy forming and is outstanding in its weldability.

Forty pages of interesting facts, figures and illustrations that tell the story of this boon to industry are yours for the asking. Mail the coupon to Republic Steel Corporation, Alloy Steel Division, Massillon, Ohio; General Offices, Cleveland, Ohio.

**Want to know how you can cut your hauling costs?**

## USE THIS COUPON

REPUBLIC STEEL CORPORATION  
CLEVELAND, OHIO

Please send full factual information on Republic Double Strength Steel.

Name \_\_\_\_\_

Company \_\_\_\_\_

Title \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_



REPUBLIC  
STEEL  
REG. U. S. PAT. OFF.

BERGER MANUFACTURING DIVISION  
NILES STEEL PRODUCTS DIVISION  
STEEL AND TUBES DIVISION  
UNION DRAWN STEEL DIVISION  
TRUSCON STEEL COMPANY



Here's another example of the traveling bill board influence. The Rapid City (S. D.) Chamber of Commerce rents space on these Fruehauf trailers from Buckingham Transportation Co. to advertise Mount Rushmore National Memorial Park in the Black Hills.

(CONTINUED FROM PAGE 88)  
hours pertain to time spent in actual driving. This is an exception to Rule 3 (a) of Part 5.

Farm truck drivers are not required to keep a log of time spent driving. This is an exception to Rule 5 (a) of Part 5. The development of a log suitable for farm trucks will be studied.

#### DRIVER-SALESMEN

No maximum daily on-duty period is prescribed for driver-salesmen who

spend more than 50 per cent of their on-duty time in selling. This is an exception to Rule 3 (b) of Part 5.

However, if a driver-salesman is permitted to be on duty for more than 60 hours per week, his actual driving time should be curtailed to a total of 50 hours in any period of 168 consecutive hours. This is an exception to Rule 3 (a) of Part 5.

#### THE 10-MINUTE RULE

The hours of service regulations applying to common and contract carriers stipulate that if a driver spends 10 minutes or less in doing anything when the vehicle is not in motion, such time shall be counted as driving time. The Commissioners in Division 5 said they would recommend to the Commission that this be changed and that the change be made applicable to all carriers: common, contract and private. The change would provide "that all stops in one village, town or city may be counted as one stop and the total of such stops may be deducted from driving time in computing the daily maximum, if the driver does not drive or operate a vehicle for more than 10 miles in such village, town or city." This is an amendment to Rule 1 (d) of Part 5.

#### WORK TRUCKS

The drivers of so-called "work trucks" used by public utilities are not required to maintain a driver's log. This is an exception to Rule 5 (a) of Part 5.

#### FILING OF REPORTS

Until Congress appropriates enough money to take care of the supervisory and clerical work involved, the Commission will not require private operators to file accident reports and reports giving full explanation when drivers work in excess of the hours prescribed or when conditions deprive them of their off-duty period of 8 hours. This exempts them from complying with Part 4 of the I.C.C. Safety Regulations, and with Rules 5 (b) and 6 (b) of Part 5.

For detailed regulations of Parts 1, 3 and 5 of the I.C.C. Motor Carrier Safety Regulations, readers are referred to the April, 1940, issue. The index to these regulations is on page 38.

Detailed regulations of Parts 2 and 6 are given on following pages.

**A CUSTOMER ASKED MR. PETERSEN:**

**"WHY ARE YOU SO WRAPPED UP IN DULUX?"**

REG. U. S. PAT. OFF.

**MR. PETERSEN TELLS WHY  
...IN A LETTER  
THAT WILL INTEREST  
YOU!**

**E**ASY TO USE." "Uniformity of quality and color." "I've never seen DULUX check or crack." Good reasons all.

And how truck fleet operators like the economy of Automotive DULUX . . . the way DULUX keeps its fine appearance in spite of brutal punishment . . . and the way it keeps their trucks out of the paint shop! How they like the money that saves!

A Du Pont Representative will be glad to explain just why DULUX gives "MORE MONTHS TO THE GALLON." E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Refinish Sales, Wilmington, Delaware.

J. PETERSEN  
TRUCKS AND AUTO PAINTING  
Reconstruction of Damaged Cars  
400 Bay Shore Boulevard  
SAN FRANCISCO, CALIFORNIA  
Telephone ATwater 1211



E. I. du Pont de Nemours & Co., Inc.  
255 Second Street  
San Francisco, California

Dear Sirs:

The other day a customer asked me why I was so much "wrapped up" in Automotive "Dulux".

As the makers of this well-known finish, you'll probably be interested in my reply which was something like this: "I prefer 'Dulux' because it's so easy to use - is uniform in quality as to drying and always dependable so that I can figure my work. I know how soon it can be taped without leaving tape marks all over the job."

From your standpoint, too, "Dulux" is ideal. It's dependable as to fastness of color (most noticeable on reds and maroons). After years of service it retains its original shade and lustre, and I have never seen "Dulux" check or crack. It's economical and gives you more value for your money because it is one finish that will last for a long time and so save you money on repainting.

These are some of the reasons why I prefer and use "Dulux" exclusively.

Sincerely yours,

*J. Petersen*

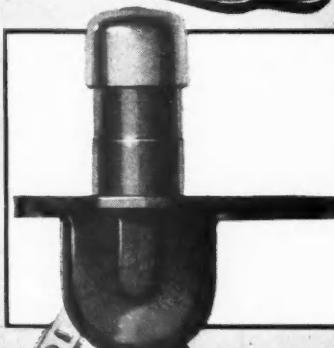
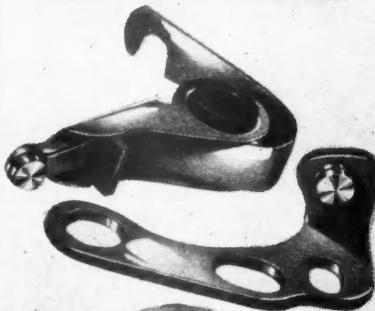
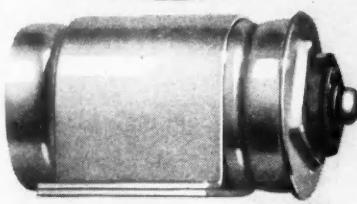


**Automotive DULUX**  
GIVES MORE MONTHS TO THE GALLON

*When writing to advertisers please mention Commercial Car Journal*

COMMERCIAL CAR JOURNAL  
JUNE, 1940

# BIGGEST NEWS IN IGNITION for the Motor Coach Industry



**Another New Delco-Remy Unit for Heavy-Duty Service**  
A new Delco-Remy dimmer switch. Road splash, slush and dirt cannot enter the sealed case. Eliminates most causes of dimmer switch failure.

# Delco-Remy

ANDERSON, INDIANA

**World's Largest Manufacturer of Automotive Electrical Equipment**

# ICC MOTOR CARRIER SAFETY REGULATIONS

## PART 2—DRIVING OF MOTOR VEHICLES

### INDEX TO PART 2

- 2.01 Compliance required.
- 2.02 Carrier may enforce additional rules.
- 2.03 Reckless driving forbidden.
- 2.04 Driving while ill or fatigued forbidden.
- 2.05 Use of alcoholic beverages on duty forbidden.
- 2.06 Control of speed.

- 2.07 Equipment to be in good working order.
- 2.08 Emergency equipment must be in place.
- 2.09 Safe loading.
- 2.10 "Clear course" before starting.
- 2.11 Keep to the right.
- 2.12 Maintain adequate space between vehicles.

- 2.13 Precautions at railroad grade crossings.
- 2.14 Precautions at drawbridges.
- 2.15 Other users of highway must not be endangered.
- 2.16 Vehicle must be in proper position for making turns.
- 2.17 Special care in overtaking or passing.
- 2.18 Overtaking must not be prevented by speeding up.
- 2.19 Vehicle must be in gear on down grade.
- 2.20 Special care required in passing stopped busses.
- 2.21 Precautions when vehicle is left unattended.
- 2.22 Vehicle when stopped must not interfere with other traffic.
- 2.23 Emergency signals for disabled vehicles.
- 2.24 Emergency signals for stopped vehicles.
- 2.25 When lighted lamps are required on moving vehicles.
- 2.26 Lights on parked or stopped vehicles.
- 2.27 Not more than four road-lighting lamps to be illuminated.
- 2.28 Use of upper and lower head lamp beams.
- 2.29 Minimum visibility requirement for road-lighting lamps.
- 2.30 Spot light must not blind other users of highway.
- 2.31 Extreme caution required under hazardous conditions.
- 2.32 Duties of driver in case of accident.
- 2.33 Special precautions during fueling process.
- 2.34 Light or flag on end of projecting load.
- 2.35 Tailboard must not obscure rear lights or reflectors.
- 2.36 Transportation of hitch-hikers and other unauthorized persons prohibited on property-carrying vehicles.

# *Forewarned IS Forearmed!*



You must comply with the new I.C.C. ruling by August 1, 1940.

The new 1940 Heavy Duty S. O. S. FIRE GUARD one-quart extinguisher meets all I.C.C. requirements.

Effective August 1, 1940, all Private Carriers, engaged in Interstate Commerce, as well as all Common and Contract Carriers must carry at least one fire extinguisher of a type approved by the I.C.C.

**Check These 12 Important Features Found  
Only in Fire Guard**

- 1 Safety Phlare Pump Cylinder.
- 2 Non-Seizing Dual Cam, Handle Lock (Also Panic Proof).
- 3 Heavy nitrite brass forged cap.
- 4 Heavy stainless steel spring, cam operated plunger rod sealing arrangement.
- 5 All Monel pump check balls at both top and bottom of pump.
- 6 Non-binding plunger rod packing box assembly.
- 7 Non-puncturing discharge tube seal.
- 8 Only one soldered joint inside of extinguisher (this joint is so small you can hardly find it).
- 9 Plunger rod not weakened by threading to attach handle.
- 10 Bracket holds extinguisher securely in place yet it can be removed without a hard jerk or pull.
- 11 Bracket provided with means that prevents extinguisher turning around or rattling.
- 12 Bracket, for added safety, provided with screw holes in the bottom supporting cup.

The new 1940 Heavy Duty S.O.S. FIRE GUARD one-quart fire extinguisher, approved by the Underwriters' Laboratories, MEETS ALL I.C.C. REQUIREMENTS. Because of its unusual construction features—notably, "Safety Phlare" and exclusive two-year guarantee—transportation companies, major oil companies, aircraft manufacturers, and the United States Government are large purchasers of FIRE GUARD.

— BEAT THE DEADLINE —

ORDER TODAY FROM YOUR LOCAL AUTO ACCESSORY JOBBER  
OR STORE

**THE GENERAL FIRE TRUCK CORPORATION**

*Established 1903*

2200 East Jefferson Ave., DETROIT, MICHIGAN

New York • Chicago • Los Angeles • San Francisco

**2.01 COMPLIANCE REQUIRED.**—Every motor carrier and his or its officers, agents, employes, and representatives concerned with the transportation of persons or property by motor vehicle shall comply with the following regulations and shall become conversant therewith.

**2.02 CARRIER MAY ENFORCE ADDITIONAL RULES.**—Nothing contained in these regulations shall be construed as prohibiting any motor carrier from enforcing additional rules and regulations relating to safety of operation, not inconsistent with these regulations, tending to a greater degree of precaution against accidents.

**2.03 RECKLESS DRIVING FORBIDDEN.**—No motor vehicle shall be driven recklessly, or so as to endanger life, limb, or property.

**2.04 DRIVING WHILE ILL OR FATIGUE FORBIDDEN.**—No motor vehicle shall be driven by any driver while his ability or alertness is so impaired through fatigue, illness, or any other cause as to make it unsafe for him to drive or to continue to drive a motor vehicle, nor shall he be required or knowingly be permitted to drive while in such condition, except in case of grave emergency where the hazard to passengers would be increased by ob-

(TURN TO PAGE 94, PLEASE)

# MARGIN of SAFETY



Douglas Bombers of the United States Army



for **LIGHT TRUCKS**  
PG Heavy Duty Sets,  
drilled and counter-  
bored.

for **MEDIUM TRUCKS**  
Only 2 materials need-  
ed; RS Molded and  
FW Woven.

for **HEAVY TRUCKS**  
Brake Blocks provid-  
ing 5 different key  
friction values.

There is a Raybestos  
Brake Lining for every  
brake and every con-  
dition of service.

Wide open . . . and straight down!  
The test pilot proves with his life  
the margin of safety figured by the  
aviation engineer.

That same vital principle of extra  
safety is built into every foot of  
Raybestos Heavy Duty Brake Lin-  
ing. Here's a lining that can take  
it because it is engineered to stop  
a vehicle with a load 300% greater  
than its normal rated capacity!

Get this safe stopping power in  
every vehicle in your fleet. The  
new Raybestos Truck Recom-  
mendation Guide shows you how.  
It's free. Write for it, on your letter-  
head, now.

THE RAYBESTOS DIVISION  
of Raybestos-Manhattan, Inc.  
BRIDGEPORT, CONN.

*Raybestos*  
AMERICA'S BIGGEST SELLING  
**BRAKE LINING**

**"YOUR 2 BEST FRIENDS for HIGHWAY SAFETY"**



## ICC SAFETY REGULATIONS

(Continued from Page 92)

service of the foregoing provisions.

**2.05 USE OF ALCOHOLIC BEVERAGES ON DUTY FORBIDDEN.**—No driver shall go on duty while under the influence of, nor drink while on duty, any alcoholic beverage or liquor, whatever its alcoholic content; nor shall he knowingly be permitted so to do.

### 2.06 CONTROL OF SPEED.

**2.061 SPEED MUST BE REASONABLE AND PRUDENT.**—No motor vehicle shall be driven at a speed greater than is reasonable and prudent, having due regard to weather,

traffic, intersections, width and character of the roadway, type of motor vehicle, and any other conditions then existing.

**2.062 LEGAL LIMITS MUST BE OBSERVED.**—In no event shall a motor vehicle be driven in or through any State, legal subdivision thereof, the District of Columbia, or any area under the control of the Federal Government at a speed greater than that permitted by such State, legal subdivision thereof, District of Columbia, or the Federal Government.

**2.063 REDUCED SPEED AT NIGHT.**—During

the night time, speed shall be reduced in keeping with reduced visibility.

(See also Rule 2.31.)

**2.07 EQUIPMENT TO BE IN GOOD WORKING ORDER.**—No motor vehicle shall be driven unless the driver thereof shall have satisfied himself that the following required parts and accessories are in good working order:

- Lighting devices and reflectors.
- Brakes, both service and hand.
- Horn.
- Windshield wiper.
- Rear-vision mirror.
- Tires.
- Steering mechanism.
- Coupling devices.

**2.08 EMERGENCY EQUIPMENT MUST BE IN PLACE.**—No motor vehicle shall be driven unless the following required accessories are in place and ready for use in case of emergency:

**2.081 ON EVERY BUS, TRUCK, OR TRACTOR—**

- (a) At least one fire extinguisher, properly filled, securely mounted in a bracket, and available for immediate use; provided, however, that this requirement shall not apply to taxicabs.
- (b) One red lantern, when projecting loads are carried.
- (c) One red-cloth flag, when projecting loads are carried.
- (d) At least one spare electric bulb for each kind of electric lamp where such electric lamp is used for any of the lighting devices required by these regulations.
- (e) At least one spare electric fuse of each kind and size used for any of the electric lighting circuits on the motor vehicle.
- (f) One set of tire chains, for all vehicles likely to encounter conditions requiring them.

(TURN TO PAGE 96, PLEASE)



Delivery of motion picture films, perishable foods, and newspapers on unbreakable schedules, under difficult night driving conditions, demands unfailing truck performance. Exhibitors Service Co., Pittsburgh, Pa., keeps 96 trucks rolling, at lowest cost, by making Hypersure Jenny Steam Cleaning the keystone of its repairing, reconditioning and cleaning program. Typical savings include complete motor block cleaning in 15 minutes that formerly required 3 hours, chassis cleaning, before repair, that saves 25% to 40% of mechanics' time, garage service jobs such as floor, window and wall cleaning done quicker and better. Give us the few simple facts below . . . we'll tell you how much Hypersure Jenny can save YOU.

**HOMESTEAD VALVE MFG. CO.  
P. O. BOX 90 CORAOPOLIS, PA.**

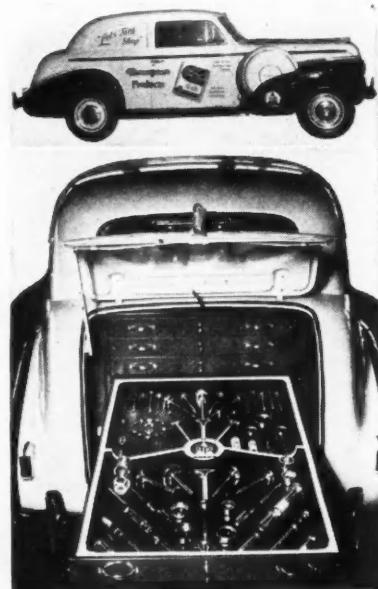
**MAIL THIS TODAY TO SAVE MONEY!**



We employ..... mechanics on dirty greasy repair work.  
We repair..... trucks monthly. We repaint..... trucks monthly. We clean..... sq. ft. of garage floors monthly.  
We want to clean.....

NAME.....

ADDRESS.....



If you hear a lilting "Merrily-we-roll-along" outside the garage door some day, chances are good it will be one of the new Thompson Product merchandising cars designed to display just about all there is in the TP line.

# Add Tons to Payloads— WITH STAINLESS STEEL TRAILERS



TONS more payload per year—several times more strength than ordinary Trailers—and considerably lower maintenance expense—that's the extra-earnings story of the new Fruehauf Stainless Steel Trailers. And leading companies are buying them in fleets\*.

It's all due to a unique combination of stainless steel material, frame-integral construction, special body design, and the patented "Shot-weld" process. You haul more every trip, yet your Trailer is far stronger, and its non-corrosive surface never requires painting. You earn more from every standpoint.

**BULK HAULERS, TOO**  
It means big savings for bulk haulers, too. With this unit you can get considerably more load space without increasing the weight of your equipment a single pound.

**COST**  
On any sound basis—per ton hauled, permile traveled, per week, per year, or over its entire long life—this new Fruehauf Stainless Steel Trailer is the lowest-cost Trailer ever on the market. Get the figures from your nearest Fruehauf man—then you be the judge.

*Largest Manufacturers of Truck-Trailers  
TRUEHAUF TRAILER COMPANY  
DETROIT, MICHIGAN  
Sales and Service In Principal Cities*



## \*A FEW RECENT BUYERS

RODGERS MOTOR LINES  
RISS & CO.  
BYERS TRANSP.  
HEMINGWAY BROS.  
NATIONAL TEA CO.  
K. C.-ILL. EXPRESS  
VIKING FREIGHT CO.  
SANTA FE TRAIL TRANSP. CO.  
DAKOTA TRANSFER AND STORAGE CO.  
BURLINGTON TRANSP.  
RIO GRANDE MOTOR WAY

**TRUEHAUF TRAILERS**  
*"Engineered Transportation"* REG. U. S.  
PAT. OFF.

## ICC SAFETY REGULATIONS

(Continued from Page 94)

(g) Three flares (pot torches), properly filled; or three red electric lanterns, equipped with batteries in proper condition, and available for immediate use.

(h) At least three fuses (unless red electric lanterns are used as warning signals), so mounted as to be protected from oil and moisture, and available for immediate use.

(i) At least two red cloth flags with standards.

### 2.082 ON EVERY BUS—

(a) All items required by Rule 2.081, and in addition:

(b) One metal first-aid kit.  
(c) One hand ax available for immediate use.

### 2.083 ON EVERY MOTOR VEHICLE DRIVEN SINGLY, OR ON THE TOWING MOTOR VEHICLE OF ANY COMBINATION OF MOTOR VEHICLES, IN TRANSIT AS A DRIVE-AWAY OPERATIONS—

(a) All items required by Rule 2.081, except that a fire extinguisher shall not be required on any such motor vehicle.

### 2.09 SAFE LOADING.

### 2.091 DISTRIBUTION AND SECURING OF

**LOAD.**—The load on every motor vehicle transporting property shall be properly distributed, and if necessary, secured, in order to prevent unsafe shifting of the load or unsafe operation of the vehicle.

**2.092 FASTENINGS SECURE.**—No motor vehicle shall be driven unless the driver thereof shall have satisfied himself that the tailboard or tailgate, tarpaulins, spare tires, and all means of fastening the load are securely in place.

**2.093 LOAD NOT TO INTERFERE WITH DRIVER.**—No motor vehicle shall be so loaded as to obscure the driver's view ahead, or to the right and left sides, or to interfere with the free movement of his arms or legs, or to prevent his free and ready access to the accessories required for emergencies.

**2.094 LOADING OF BUSES.**—All baggage, freight, or express carried in any bus shall be so loaded as not to interfere with the free and ready entering or leaving such bus, and shall be so stowed as to prevent falling on to or against any passenger.

**2.10 "CLEAR COURSE" BEFORE STARTING.**—No motor vehicle shall be set in motion until due caution has been taken to ascertain that the course is clear.

**2.11 KEEP TO THE RIGHT.**—Every motor vehicle shall be driven as far to the right side of the traveled portion of the highway as is practicable.

**2.12 MAINTAIN ADEQUATE SPACE BETWEEN VEHICLES.**—Sufficient space shall be maintained, whenever conditions permit, between vehicles proceeding in the same direction so that an overtaking vehicle may enter and occupy such space without danger. This rule shall not be construed to prevent overtaking and passing another vehicle.

### 2.13—PRECAUTIONS AT RAILROAD GRADE CROSSINGS.

**2.131 CERTAIN VEHICLES MUST STOP.**—Every motor vehicle transporting—

- (a) Passengers,
- (b) Dangerous explosive,
- (c) Chlorine,

(d) Class B or Class C poisons, inflammable compressed gases, or corrosive liquids in cargo tanks.

(e) Class A poisons. (Special requirements for the transportation of explosives and other dangerous articles will be, under present plans, the subject of Part 7 of these regulations.)

(f) Every motor vehicle used for the transportation of inflammable liquids in cargo tanks, whether loaded or empty, shall upon approaching any railroad grade crossing, be brought to a full stop within 50 feet but not less than 10 feet, from the nearest rail of such railroad grade crossing, and shall not proceed until due caution has been taken to ascertain that the course is clear; provided, however, that such full stop shall not be required at a street-car crossing within a business or residence district, nor at a railroad grade crossing protected by a watchman or traffic officer on duty or by a traffic-control "stop and go" signal (not railroad flashing signal) giving positive indication to approaching vehicles to proceed.

**2.132 OTHER VEHICLES MUST SLOW**  
**(TURN TO PAGE 98, PLEASE)**

The Maintenance Chief Knows  
What he is  
Talking About

GATKE Genuine CUSTOM-BILT  
Brake Lining Set

GATKE CUSTOM-BILT Brake Block  
Material for Trucks,  
Trailers and Buses.

When he says GATKE  
Genuine Custom-Bilt Brake Lin-  
ing Sets give smoother, Safer  
Braking and Longer wear life for  
every type of vehicle, the Main-  
tenance Chief knows what he is  
talking about.

You can soon prove it. Just  
use GATKE CUSTOM-BILT Sets  
on your next five relines. Com-  
pare performance and wear life  
with the best you have ever used.

To make sure you get the  
fullest benefit from GATKE Brake  
Lining, ask your GATKE Jobber  
or write us for Fleet Survey and  
Recommendations.

Gatke  
QUALITY

BRAKE BLOCKS <sup>A</sup> <sub>D</sub> LINERS

GATKE CORPORATION 228 N. La Salle St., CHICAGO, ILL.

**YOU NEEDED IT... WE MADE IT**

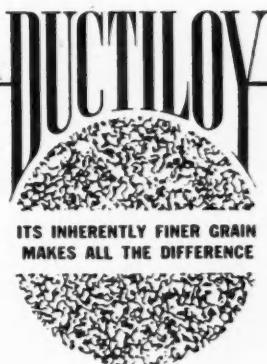
# DUCTILOY

## National Steel High Tensile Alloy

*Extremely high resistance to  
FATIGUE—IMPACT  
at normal as well as at very  
low temperatures.*

*Unusual DUCTILITY—  
approaching the best  
grade of deep drawing  
carbon steel.*

HIGH YIELD POINT—ULTIMATE STRENGTH  
EXCELLENT WORKABILITY  
CORROSION AND ABRASION RESISTANCE



Realizing there wasn't a high tensile low alloy steel on the market that combined cold forming and deep drawing properties, excellent weldability with the added strength and resistance to corrosion and abrasion obtained by adding alloys to mild steel, Great Lakes metallurgists undertook a number of years ago to provide such a steel. Less than two years ago, DUCTILOY was placed on the market. And it contained all the properties of a high tensile low alloy steel plus the cold drawing and forming features approaching the best grade of deep drawing mild steel.

Of major importance to users of high tensile steel is the unusually high resistance DUCTILOY has to impact and fatigue, at normal as well as at sub-zero temperatures. This means that parts, products and mobile equipment made of DUCTILOY have the stamina to stay on the job longer with lower maintenance costs.

In scores of very difficult applications, in many of which other high tensile steels have failed, DUCTILOY is being used and receiving the acclaim of both manufacturer and user.

If you want all the advantages of the best high tensile steel, plus the cold drawing and cold forming properties of deep drawing mild steel, specify and get DUCTILOY.

Great Lakes engineers are available to show you how you can use this really *superior* high tensile steel to advantage. One will be glad to call at your convenience—no obligation. Wire, write or telephone for one today. Great Lakes Steel Corporation, Detroit, Michigan.

### GREAT LAKES STEEL CORPORATION

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## **ICC SAFETY REGULATIONS**

(Continued from Page 96)

**DOWN AND BE PREPARED TO STOP.**—The speed of any other motor vehicle shall, upon approaching a railroad grade crossing, be reduced to a rate that shall enable a stop to be made before reaching the nearest rail of such crossing, and the crossing shall not be traversed until due caution has been taken to ascertain that the course is clear.

**2.133 NO GEAR CHANGES ON CROSSINGS.**—In all cases where gear change may be made at the option of the driver, crossing shall be made only in such gear that there shall be no necessity for changing gears while traversing such crossing.

**2.134 DRIVER MUST ASCERTAIN THAT COURSE IS CLEAR.**—Nothing contained in this rule shall be so construed as to relieve the driver of the responsibility in any case of exercising due caution to ascertain that the course is clear before proceeding over such crossing.

**2.14 PRECAUTIONS AT DRAW-BRIDGES.**

**2.141 VEHICLES TRANSPORTING PASSENGERS MUST STOP.**—Every motor vehicle transporting passengers shall, upon approaching any drawbridge, known or marked as such, be brought to a full stop, not less than 50 feet from the lip of the draw, and shall not proceed unless the draw is closed; provided, however, that such full stop shall not be required at any drawbridge protected by a watchman or traffic officer on duty, or by a traffic-control "stop and go" signal giving positive indication to approaching vehicles to proceed.

**2.142 OTHER VEHICLES MUST SLOW DOWN AND BE PREPARED TO STOP.**—Any other motor vehicle upon approaching any drawbridge shall be driven at such speed as to permit it to be stopped before reaching the lip of the draw, and shall proceed only if the draw is closed.

**2.143 DRIVER MUST ASCERTAIN THAT COURSE IS CLEAR.**—Nothing contained in this rule shall be so construed as to relieve the driver of the responsibility in any case of exercising due caution to ascertain that the draw is closed.

**2.15 OTHER USERS OF HIGHWAY MUST NOT BE ENDANGERED.**—No motor vehicle, except in case of emergency, shall be stopped, its speed suddenly decreased, nor its course or direction changed, unless the driver thereof shall have exercised due caution to ascertain that such acts can be performed without endangering other users of the highway.

**2.16 VEHICLE MUST BE IN PROPER POSITION FOR MAKING TURNS.**—Upon all highways any right turn shall be made from a position which is as close as practicable to the extreme right side of the traveled portion of the highway. Upon two-way highways any left turn shall be made from a position which is as close as practicable to the center of the traveled portion of the highway. Upon one-way highways and upon highways on which the

(TURN TO PAGE 100, PLEASE)

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March 20, 1940

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would withstand the ravages of weather flying  
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fortune to have you happen along with your  
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We wish to thank you for your im-  
mense cooperation in enabling us to overcome our  
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## SHERWIN-WILLIAMS KEM TRANSPORT ENAMELS



Roy A. Fruehauf, trailer company vice-president, congratulates Ted V. Rodgers as the latter accepts the first of the new Fruehauf stainless trailers made by the Budd Shot-weld process.

## ICC SAFETY REGULATIONS

(Continued from Page 98)

opposing streams of traffic are separated by a dividing strip or zone, any left turn shall be made from a position which is as close as practicable to the extreme left side of the traveled portion of such highways. In all cases turns shall be made with due caution, having due regard to the length of the motor vehicle and any load thereon, the width of the roadway, and other traffic. Before making any turn the motor vehicle shall be driven into the proper lane well in advance of the intersection.

**2.17 SPECIAL CARE IN OVERTAKING OR PASSING.**—No motor vehicle shall be driven past a vehicle or vehicles proceeding in the same direction, unless there is ample visible space ahead to do so without endangering any other user of the highway; if necessary, an audible signal of intention to pass shall be sounded. After passing, the motor vehicle shall not be returned to the right side of the roadway until safely clear of the overtaken vehicle or vehicles.

**2.18 OVERTAKING MUST NOT BE PREVENTED BY SPEEDING UP.**—The speed of a motor vehicle shall not be increased to prevent being overtaken by another vehicle attempting to pass.

**2.19 VEHICLE MUST BE IN GEAR ON DOWN GRADE.**—No motor vehicle shall be driven upon a down grade with gears in neutral or clutch disengaged.

**2.20 SPECIAL CARE REQUIRED IN PASSING STOPPED BUSSES.**—No motor vehicle when meeting or overtaking any school or other bus discharging or taking on passengers shall be driven past such bus except with extreme caution and only if the course ahead is known to be clear.

**2.21 PRECAUTIONS WHEN VEHICLE IS LEFT UNATTENDED.**—No motor vehicle shall be left unattended until after the parking (hand) brake has been securely set and all other reasonable precautions have been taken to prevent its movement while unattended.

**2.22 VEHICLE WHEN STOPPED MUST NOT INTERFERE WITH OTHER TRAFFIC.**—No motor vehicle shall be stopped, parked, or left standing, whether attended or unattended, upon the traveled portion of any highway outside of a business or residence district, when it is practicable to stop, park, or leave the motor vehicle off the traveled portion of such highway. When conditions make it impracticable to move the motor vehicle from the traveled portion of the highway, every effort shall be made to leave all possible width of the highway opposite such standing motor vehicle for the free passage of other vehicles, and care taken to provide a clear view of such stopped motor vehicle as far as possible to the front and rear.

(See also Rule 2.24.)

**2.23 EMERGENCY SIGNALS FOR DISABLED VEHICLES.**—Whenever any motor vehicle is disabled upon the traveled

(TURN TO PAGE 102, PLEASE)

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## ICC SAFETY REGULATIONS

(Continued from Page 100)

portion of the highway or the shoulder next thereto, except within a business or residence district of a municipality, the following requirements shall be complied with during the period of such disablement:

**2.231 PLACING OF FUSEES AND FLARES.**—During the time that lights are required (see Rule 2.25), except as provided in Rules 2.232, 2.233, and 2.234, a lighted fusee shall be immediately placed on the roadway at the traffic side of the motor vehicle; as soon thereafter as possible and in any

case within the burning period of the fusee, three lighted flares (pot torches) shall be placed on the roadway, as follows:

- (a) One in the center of the lane of traffic occupied by the disabled motor vehicle and not less than 40 paces (approximately 100 feet) distant therefrom in the direction of traffic approaching in that lane;
- (b) One not less than 40 paces (approximately 100 feet) from such vehicle in the opposite direction, and
- (c) One at the traffic side of such vehicle

approximately 10 feet rearward or forward thereof;

(d) Provided, however, that if the motor vehicle is disabled within 300 feet of a curve, crest of a hill, or other obstruction to view, the flare in that direction shall be so placed as to afford ample warning to other users of the highway, but in no case less than 40 paces (approximately 100 feet) nor more than 120 paces (approximately 300 feet) from the disabled vehicle;

(e) Provided further, that care shall be taken in the placing of any flare (liquid burning pot torch), fusee, or any signal produced by a flame, to prevent igniting any gasoline or other inflammable liquid or gas.

**2.232 USE OF RED ELECTRIC LANTERNS FOR CERTAIN TANK MOTOR VEHICLES.**—For every motor vehicle used for the transportation of inflammable liquids or inflammable compressed gases in cargo tanks, whether loaded or empty, the use of flares (pot torches), fusees, or any signal produced by a flame is prohibited, and lighted red electric lanterns shall be used in lieu thereof. One of the said red electric lanterns shall be immediately placed on the roadway at the traffic side of the motor vehicle and immediately thereafter the two other red electric lanterns shall be placed to the front and rear of the motor vehicle in the same manner prescribed in Rule 2.231 for the placement of lighted flares (pot torches).

**2.233 OPTIONAL USE OF RED ELECTRIC LANTERNS.**—For every motor vehicle not required to carry red electric lanterns, but electing to carry them in lieu of flares (pot torches) and fusees, the placement of such lighted red electric lanterns in the event of disablement shall be as set forth in Rule 2.232.

**2.234 PLACING OF FLAGS.**—During such time as lights are not required, red flags shall be placed in the manner prescribed for flares or red electric lanterns, except that no flag shall be required to be placed at the side of the vehicle; provided, however, that if such disablement continues into the period when lights are required, lighted flares or lighted red electric lanterns shall then be placed as prescribed.

**2.24 EMERGENCY SIGNALS FOR STOPPED VEHICLES.**—Whenever any motor vehicle is stopped upon the traveled portion of the highway or the shoulder next thereto, except within a business or residence district of a municipality, for any cause other than disablement (see Rule 2.23) or necessary traffic stops, the following requirements shall be complied with during the period of such stop:

**2.241 PLACING OF FUSEE OR RED ELECTRIC LANTERN.**—During the time that lights are required (see Rule 2.25), a lighted fusee or lighted red electric lantern shall be immediately placed on the roadway at the traffic side of the motor vehicle.

**2.242 PLACING OF FLARES, RED ELECTRIC LANTERNS, OR FLAGS.**—If such stop exceeds or is intended to exceed 10 minutes, the placing of flares, red electric lanterns, or flags shall be in the manner prescribed under Rule 2.23.

**2.25 WHEN LIGHTED LAMPS ARE TURNED ON, PLEASE**

## Your insurance policy says: "six-wheelers are safer"



On liability and property damage policies, insurance companies indicate that six-wheel trucks are preferred risks to the tune of as much as twenty to fifty per cent lower rates. When it comes to favoring one type of vehicle over another, insurance actuaries have no axe to grind. They are governed by cold, hard facts based on remorseless statistics.

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But safety, important though it is, is only one of the advantages of Trucktor Six-Wheel Trucks. Economy and convenience are others that rank high in the estimation of owners. Send for further information on how the Trucktor Third Axle Unit is saving real money for hundreds of fleet operators.

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**ARE THE ULTIMATE ANSWER TO  
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**BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE COMPANY • PITTSBURGH, PENNA.**

## ICC SAFETY REGULATIONS

(Continued from Page 102)

**REQUIRED ON MOVING VEHICLES.**—Whenever any motor vehicle is driven upon a highway there shall be displayed the lighted lamps required under Rule 3.31 during the following times:

- (a) During the period from one-half hour after sunset to one-half hour before sunrise;
- (b) During any other time when there is not sufficient light to render clearly discernible persons and vehicles on the highway at a distance of 500 feet ahead; provided, that clearance and side-marker

lamps need not be lighted when within any municipality where there is sufficient light to render clearly discernible persons and vehicles on the highway at a distance of 500 feet.

**2.26 LIGHTS ON PARKED OR STOPPED VEHICLES.**—Whenever any motor vehicle is parked or stopped upon the highway within a business or residence district of a municipality, whether attended or unattended, during the times mentioned in Rule 2.25, at least one white or amber

light shall be displayed on the traffic side of the motor vehicle visible from a distance of 500 feet to the front of the motor vehicle, and at least one red light visible from a distance of 500 feet to the rear; provided, that headlights, if used, shall be dimmed or depressed.

**2.27 NOT MORE THAN FOUR ROAD-LIGHTING LAMPS TO BE ILLUMINATED.**—When a motor vehicle is equipped with more than four lamps of the character of head lamps, auxiliary road-lighting lamps, or spot lamps, not more than four such lamps shall be lighted at any one time.

**2.28 USE OF UPPER AND LOWER HEAD LAMP BEAMS.**—Whenever the road-lighting equipment on a motor vehicle is so arranged that the driver may select at will between two or more distributions of light from head lamps or auxiliary road-lighting lamps or combinations thereof, directed to different elevations, the following requirements shall apply while driving during the times when lights are required:

**2.281 UPPER BEAM.**—When there is no oncoming vehicle within 500 feet, the driver shall use an upper distribution of light; provided, however, that a lower distribution of light may be used when fog, dust, or other atmospheric conditions make it desirable for reasons of safety, and when within the confines of municipalities where there is sufficient light to render clearly discernible persons and vehicles on the highway at a distance of 500 feet ahead, and when following another vehicle within 500 feet.

**2.282 LOWER BEAM.**—When within 500 feet of an oncoming vehicle, the driver shall use a distribution of light so aimed that the glaring rays therefrom are not directed into the eyes of the oncoming driver.

**2.29 MINIMUM VISIBILITY REQUIREMENT FOR ROAD-LIGHTING LAMPS.**—At no time while driving during the periods when lights are required shall any distribution of light be used which will not reveal a person or vehicle at a distance of at least 100 feet ahead under normal atmospheric conditions; provided, however, that dimmed headlights may be used in fog, or other abnormal weather or atmospheric conditions, when they tend to promote safety.

**2.30 SPOTLIGHT MUST NOT BLIND OTHER USERS OF HIGHWAY.**—No (TURN TO PAGE 106, PLEASE)

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FOR THE  
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When clutch is engaged the segments flex under the pressure exerted through the two rings until facings are firmly seated against the segments. Resilience against thrust is positive and permanent.



**Helical Springs . . .**  
around flexible center absorb sudden torque and uneven power impulses. Springs are held positively in place by spring retainers. Springs cannot be compressed to critical point, thus avoiding fatigue, permanent set or breakage.



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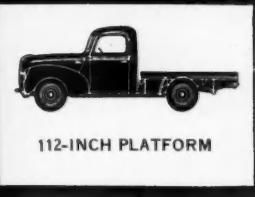
112-inch Pickup  
60 or 85 hp engine



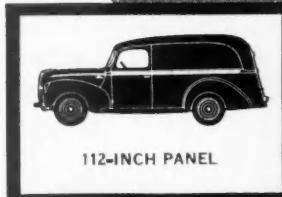
In two ways, at least, your hauling or delivery job is just like anybody else's. You need a particular type of body, and you must have a unit that costs little to operate. Fords have always been popular in the light-duty field. Today, their acceptance is wider than ever before. Reasons: Dependability and proved performance over thousands of miles; mechanical features such as semi-centrifugal clutch,  $\frac{3}{4}$ -floating rear axle, smooth hydraulic brakes; sturdy, X-member frames and strong bodies. But above all, these Ford light-duty units are winning friends because they're money-savers, every one!



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Ford trucks:  
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a Free On-The-Job  
Test

## FORD TRUCKS and COMMERCIAL CARS

## ICC SAFETY REGULATIONS

(Continued from Page 104)

spotlight shall be so aimed upon approaching another vehicle that any part of the high-intensity portion of the beam therefrom is directed beyond the left side of the motor vehicle upon which the spot lamp is mounted, nor more than 100 feet ahead of such motor vehicle.

**2.31 EXTREME CAUTION REQUIRED UNDER HAZARDOUS CONDITIONS.**—Extreme caution in the operation of motor vehicles shall be exercised under hazardous conditions, such as snow, ice, sleet, fog, mist, rain, dust, smoke or any other con-

dition which adversely affects visibility or traction, and speed shall be reduced accordingly.

**2.32 DUTIES OF DRIVER IN CASE OF ACCIDENT.**—The driver of any motor vehicle involved in an accident resulting in death, personal injury, or property damage, shall forthwith stop at the scene of the accident and remain there until he shall have (a) rendered all possible assistance to injured persons; and (b) given to any person demanding the same his name and address, the name and address of his em-

ployer, if any, and his vehicle registration number. He shall take all reasonable precautions to prevent further accidents at the scene. As soon as possible after the accident the driver (if not himself a motor carrier) shall report all details of the accident to his employer or supervisory official.

**2.33 SPECIAL PRECAUTIONS DURING FUELING PROCESS.**

**2.331 CARE TO PREVENT IGNITION OF FUEL.**—No motor vehicle shall be fueled or be permitted to be fueled with engine running, or in the presence of any open flame. Care shall be exercised to prevent the ignition of fuel by lighted cigars, cigarettes, pipes, or other sources of ignition.

**2.332 ELECTRIC GROUNDING OF FUEL HOSE.**—The nozzle of the fuel hose shall be in contact with the intake of the fuel tank throughout the fueling process.

**2.333 FUELING OF BUSES.**—Fueling of a bus carrying passengers shall be reduced to the minimum number of times necessary in such transportation and in no event shall any such motor vehicle be fueled in a closed building with passengers aboard.

**2.334 RESERVE FUEL SUPPLY.**—No reserve supply of fuel shall be carried on any motor vehicle except in a properly constructed and mounted main fuel tank, cylinder, or auxiliary tank except that this provision shall not be construed to prohibit the use of a properly constructed cargo tank for liquefied fuel gases as a proper source of fuel supply.

**2.34 LIGHT OR FLAG ON END OF PROJECTING LOAD.**—During the time when lights are required to be displayed, there shall be attached to the rearmost extremity of any load which projects 4 feet or more beyond the rear of the body of the motor vehicle, or to any tailboard or tailgate so projecting, or to the rearmost extremity of any load carried on a pole trailer, at least one lighted red lantern securely fastened thereto, which shall be visible from a distance of at least 500 feet to the sides and rear under normal atmospheric conditions. At all other times a red-cloth flag shall be so displayed.

**2.35 TAILBOARD MUST NOT OBSCURE REAR LIGHTS OR REFLECTORS.**—No motor vehicle shall be operated with the tailboard or tailgate in such position as to obscure any of the required rear lights or reflectors.

**2.36 TRANSPORTATION OF HITCHHIKERS AND OTHER UNAUTHORIZED PERSONS PROHIBITED ON PROPERTY-CARRYING VEHICLES.**—No person, other than employees of the motor carrier, shall be transported upon any motor vehicle not designed or adapted and used for the transportation of passengers unless specifically authorized in writing by the motor carrier; provided, however, that nothing contained in this rule shall be construed as to prohibit the carrying of any person in case of an accident, or in other emergencies.

**PART 6  
BEGINS ON NEXT PAGE**



## STOP WASTING GAS!

**Adjust Carburetors  
and Governors  
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### **R. P. M. INDICATOR**

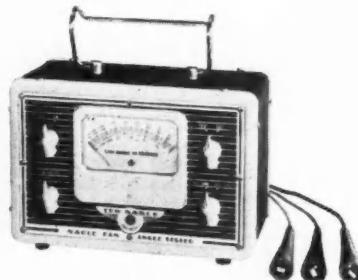
The R.P.M. INDICATOR Model No. 130 is a miniature dynamometer. Enables you to make adjustments to carburetor and ignition system at known engine speeds. No guessing. Attaches to one spark plug and operates from car battery. Only R.P.M. Indicator operating on six or twelve volts. This is important in making road tests. Reading ranges 0-2000 and 0-4000 R.P.M. Thousands in use. Will save its low cost in short time.

**For TOP PERFORMANCE  
Insure Correct Cam Angle  
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CAM ANGLE TESTER**

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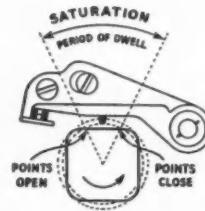
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This outstanding line of automotive test equipment open to reputable jobbers in several good territories.



### **WHAT IS "CAM ANGLE"?**

Cam angle is the angle of cam rotation through which the distributor points remain closed. Also called the "dwell" of the contacts. Angle is decreased with increased point opening; increased with rubbing-block wear.



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GENERAL MOTORS BUILDING • DETROIT, MICHIGAN**

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JUNE, 1940

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YOUR EMERGENCY BRAKE  
SHOULD BE EFFECTIVE  
AT ANY SPEED"**

"A test of an emergency brake at 20 miles per hour is not sufficient evidence that the brake can handle the vehicle in a real emergency.

"Emergency brakes should not be used only for parking and for getting past inspections. They should be able to supplement the service brakes, as in descending long, steep grades where continuous application is required."



**the DISC makes  
TRU-STOP  
safe at ANY speed**

The linings of a TRU-STOP Emergency Brake are not affected by the destructive action of braking heat. This heat is removed immediately by the TRU-STOP Ventilated Disc. Linings are protected.

TRU-STOP can be used safely—and continuously—**FROM ANY SPEED**.

**AMERICAN CABLE DIVISION**  
12-252 General Motors Bldg., Detroit, Michigan  
San Francisco: 630 Third Street



*In Business for Your Safety*

**AMERICAN CHAIN & CABLE COMPANY, Inc.**

# ICC MOTOR CARRIER SAFETY REGULATIONS

## PART 6—INSPECTION AND MAINTENANCE

### INDEX TO PART 6

- 6.1 Compliance required.
- 6.2 Inspection and maintenance required.
- 6.3 Remedy or repair to be made.
- 6.4 Damaged vehicles to be inspected.
- 6.5 Lubrication required.
- 6.6 Driver's trip report.
- 6.7 Inspection of drive-away operations.

### Recommended practices:

- Driver's trip report.
- Daily or weekly inspection.
- Wiring inspection.
- Periodic inspection.

**6.1 COMPLIANCE REQUIRED.**—Every motor carrier shall comply with Rules 6.1 to 6.7, inclusive, with respect to all opera-

tions other than drive-away operations.

**6.2 INSPECTION AND MAINTENANCE REQUIRED.**—Every motor vehicle shall be maintained in safe operating condition and sufficient frequency of inspection shall be made to determine compliance with this rule.

**6.3 REMEDY OR REPAIR TO BE MADE.**—Any defect or deficiency revealed by inspection as likely to cause a serious hazard to persons or property by the operation of any motor vehicle shall be remedied or repaired before the motor vehicle is continued in, or returned to, service.

**6.4 DAMAGED VEHICLES TO BE INSPECTED.**—No motor vehicle, any part of which shall have been damaged by accident or other cause, shall thereafter be continued in or returned to service until inspection shall have been made to ascertain the nature and extent of the damage.

**6.5 LUBRICATION REQUIRED.**—All rubbing or moving parts, including bearings, journals, pins, joints, and other parts for which lubrication is required, shall be kept lubricated in accordance with sound practice.

**6.6 DRIVER'S TRIP REPORT.**—Every driver employed by a motor carrier shall at the end of his day's work or tour of duty report in writing to his employer any such defect or deficiency of the motor vehicle discovered by him during such day's work or tour of duty as would be likely to affect the safety of operation of that vehicle.

**6.7 INSPECTION OF DRIVE-AWAY OPERATIONS.**—Every motor carrier with respect to motor vehicles in drive-away operations shall comply with the following Rules (6.71 and 6.72), in addition to the requirements set forth in Rules 6.3 and 6.4.

**6.71 INSPECTION BEFORE BEGINNING TRIP.**—Before the beginning of any drive-away operation of motor vehicles in combination, inspection shall be made to ascertain that the tow-bar or saddle-mount connections are secured to the towed and towing vehicles, that they function adequately without cramping or binding of any of the parts, and that the towed motor vehicle follows substantially in the path of the towing vehicle without whipping or swerving.

**6.72 INSPECTION FOLLOWING TRIP.**—Following the completion of any trip in a drive-away operation of motor vehicles in combination, and before their use again, the tow-bar or saddle-mount connections shall be disassembled and inspected for worn, bent, cracked, broken, or missing parts. Suitable repair or replacement shall be made of any such parts, and the connections properly reassembled.

## MIDLAND → AIR BRAKE KITS



Complete kits for Ford, Dodge, Chevrolet, G. M. C. and International trucks, tractors and buses. Contain every nut, bolt and screw needed, plus detailed installation instructions, same as famous Midland Vacuum brake kits. Thoroughly engineered and backed by our Factory Rebuilt Exchange Plan.

## WITH BIG → 7.3 C.F. COMPRESSOR



Self lubricated 7.3 cu. ft. compressor provides the extra reserve power you need for city traffic, hilly roads or wherever brakes are needed most. Midland's fully compensating foot control valve releases any desired amount of air pressure. See your nearest Midland Distributor today—or write us direct for complete details.

THE MIDLAND STEEL PRODUCTS CO.  
10605 MADISON AVENUE • CLEVELAND, OHIO  
Export Department, 38 Pearl Street • New York City



**MIDLAND**  
(CHRISTENSEN)  
*Power Brakes*

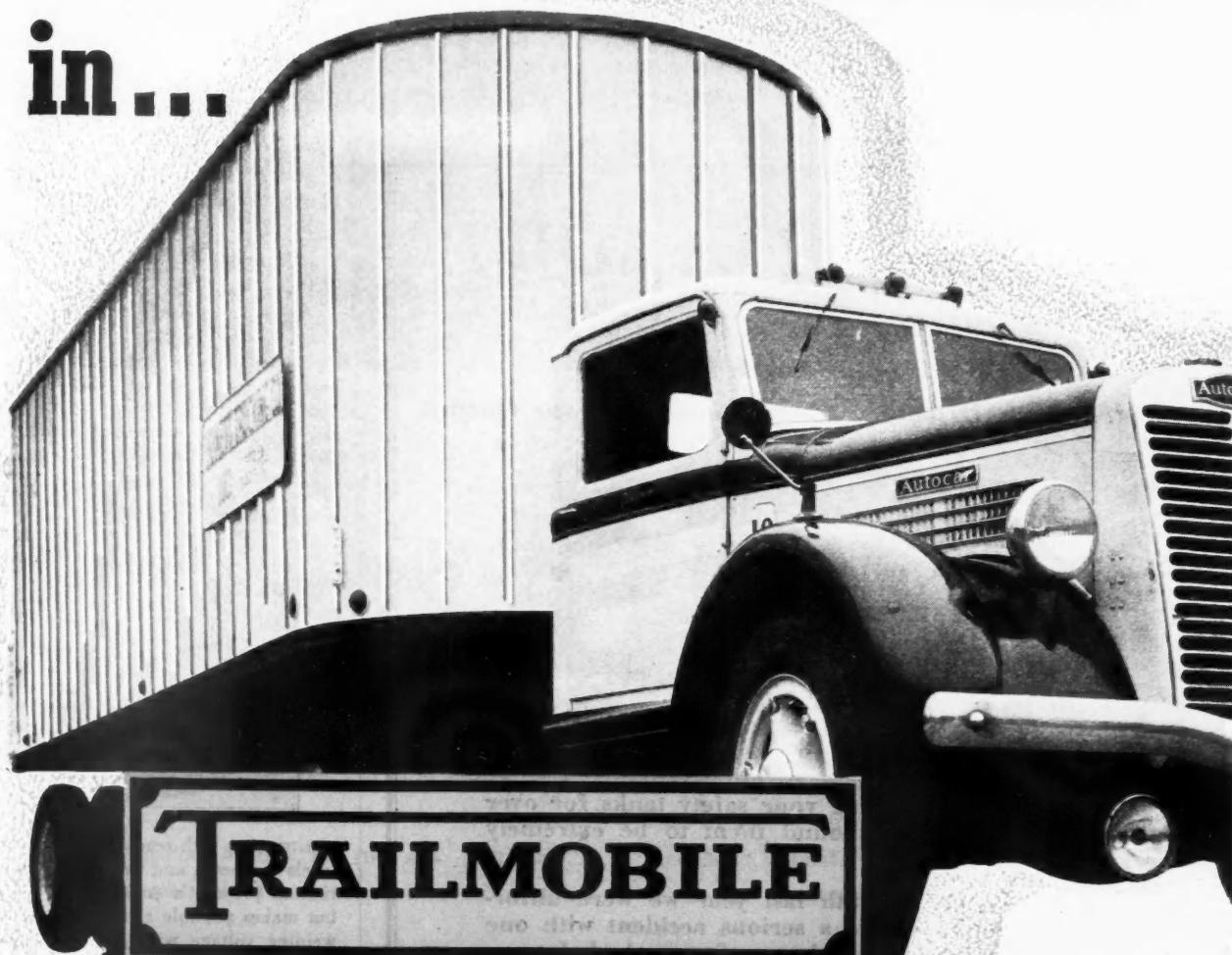


When writing to advertisers please mention Commercial Car Journal



Operators of a Red River Valley ranch in North Dakota found that their new Dodge truck follows the soft furrows of the potato fields without driver, thus freeing a man.

# THERE'S NO DEAD WEIGHT TO CARRY in...



**TRAILMOBILE**

**TRAILERS**

Check the actual weights—not hopes or promises—and you'll see that Trailmobile is truly a light weight job. There are no excess parts that add to dead weight. It's built to carry big payloads—safely and economically—at the lowest ton-mile cost. Call the nearest Trailmobile office for details of this dependable equipment that can be relied on to carry profitable tonnage and stay out of the repair shop.

*The  
Easiest  
Pulling  
Trailer  
On The  
Road*

**THE TRAILER COMPANY OF AMERICA, CINCINNATI, OHIO**

New York, Cleveland, Chicago, Oakland—sales and service agencies in every prominent marketing center.

## NEW PRODUCTS

(CONTINUED FROM PAGE 40)

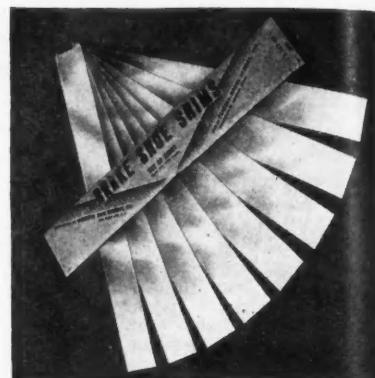
### Compound for Cooling Systems

A new compound known as Wonder Solv, made from the juices of natural vegetation, and said to remove rust, scale, corrosion and pitting from all internal combustion water-cooled engines, radiators, steam, hot water or solar heating systems, has been introduced by the Miller Mfg. Co., Camden, N. J., manufacturer of WonderWeld. Wonder Solv is said to turn the rust into a liquid form, which can be washed out

by running water through the system, eliminating the necessity for back-flushing. It mixes with any anti-freeze and is claimed to prevent any further accumulation of rust or corrosion. According to the manufacturer, the new Wonder Solv is harmless to humans or animals and can be taken internally with no ill effects.

### Brass Brake Shoe Shims

A new type of brake shoe shim has just been announced by the Laminated Shim Co., Long Island City, N. Y. The shims are of .025 in. thick brass, 18 in. long, and are available in 1½, 1¾, 2, 2¼ and 2½ in. widths. Each set of eight shims is pack-



aged in an envelope container, plainly marked with shim size.

### Bear Announces Welding Unit

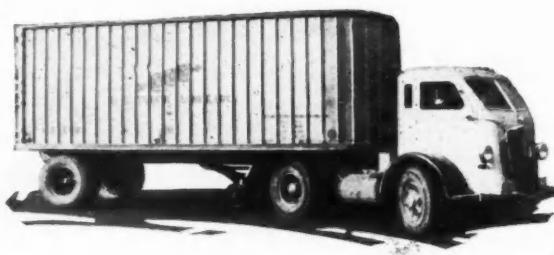
A new heavy-duty, all-metal welding unit, featuring constant power flow control and built on an improved safety design, has been put on the market by the Bear Mfg. Co., Rock Island, Ill. Known as the A. C. Arcmaster, the new unit has transformer laminations of silicon steel and oversize core and wire to withstand heat created under constant usage. According to the manufacturer, the multiple coil transformer

# Be Prepared... NOW!!

### AMERICAN SAFETY TANKS

**DO Prevent Truck Fires!!**

**Protect Your Driver . . . Your Load . . . Your Outfit**



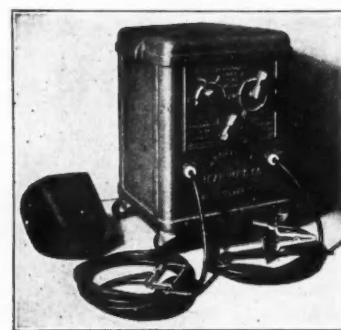
January 25, 1940  
Cleveland, Ohio

**"We have been using your safety tanks for over two years, and have found them to be extremely satisfactory.**

**About December 15th last year we were unfortunate enough to have a serious accident with one of our double units—the outfit crashed into a bridge and pinned the driver in the cab; although the tanks received quite a bit of the force of this accident, they suffered no leakage of gasoline and no fire occurred. We feel in this case the safety features of American Safety Tanks saved the life of our operator and prevented any serious fire loss.**

**L. O'BRIEN, Vice President, Operation  
The Cleveland, Columbus & Cincinnati Highway, Inc.**

*Ask the Men Who Use Them!*



construction with reactance control not only levels the peaks and valleys of power variation to provide a smooth flow of current, but makes possible a uniform and constant welding voltage with calibrated amperage from lowest to highest output.

The unit is furnished in three models with ranges of 10-200 amperes, 10-250 amperes and 10-300 amperes. All models have 220, 60-cycle voltages.

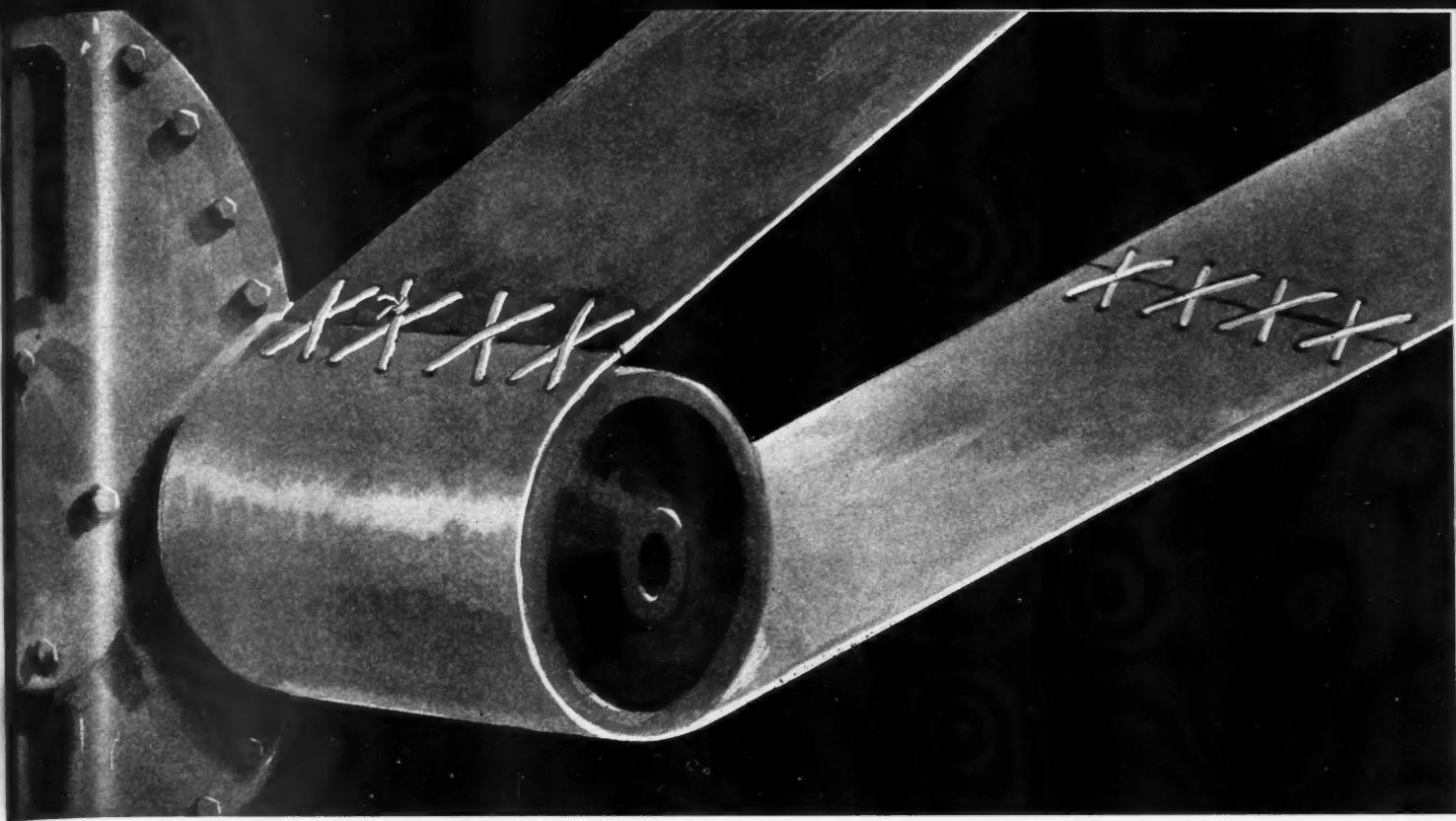
### Battery Plier and Wrench

A new combination battery plier and wrench, designed for use on batteries and battery cables, has been announced by the Belden Mfg. Co., 4689 W. Van Buren St.,



Chicago. The plier known as Belden 7505, is of chrome vanadium steel and has its jaws set at an angle which provides positive gripping of corroded or mutilated terminal nuts. The two handles have  $\frac{5}{8}$  in. and 9/16 in. box wrench openings.

(TURN TO PAGE 112, PLEASE)



## You Can Hardly Call THIS A ONE-PIECE Belt!

It stands to reason—no matter how they're joined, three sections of belting don't make a *one-piece* belt! Neither do *three* pieces of metal, welded together, make a *one-piece* axle!

So when we say that Shuler Axles are honest-to-goodness one-piece axles, we mean just this: They're made *entirely* from *one* piece of metal.

The spindles are NOT welded on—they're *swaged down* from the same fine steel bar or tube that forms the body of the axle itself. The result is maximum strength, maximum dependability.

You know—everybody knows—that one-piece construction is best. Yet Shuler Axles cost no more! Write for quotations, then judge for yourself!

**SHULER AXLE CO., Incorporated, LOUISVILLE, KY.**

Detroit Office: General Motors Building

Export Division: 38 Pearl St., New York, N. Y.

West Coast Warehouse: 440 Golden Gate Ave., San Francisco, Calif.

# SHULER AXLES AND BRAKES

**BETTER  
SERVICE!**

Many of Shuler's best customers were first won by our eagerness to be helpful in emergencies—such as in rapidly getting out troublesome "specials" and small orders. We invite you to test our cooperativeness on any of our products:

Shuler Square and Tubular Trailer Axles

Shuler I-Beam Trailer

Axles for Utility or House Trailers

Shuler Front Axles for Trucks, Tractors, Farm Machinery, etc.

Shuler Truck and Trailer Brakes

Shuler Heavy-Duty Brakes and Trunnion Axles for Low-Platform Heavy-Duty Trailers

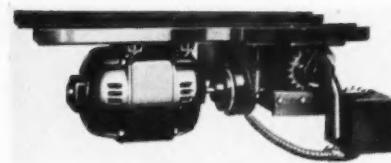
Custom forgings

## NEW PRODUCTS

(CONTINUED FROM PAGE 110)

### Overhead Safety Door

The new safety controlled Model MC Electric Door Operator, manufactured by Barber-Colman Co., Rockford, Ill., is designed to prevent accidents involving persons or vehicles attempting to pass through electrically operated commercial garage doors. The attendant must remain at the control station and hold the "close" button during the entire closing stroke. In



case of any danger, he merely removes his hand from the button and the operating motor will instantly reverse, causing the door to reopen. To open the door, the "open" button is held for only a second; the door will continue to the open position unless the "close" button is pushed during the stroke. All operating mechanism is contained in the power unit shown.

**SERVING THE AUTOMOTIVE INDUSTRY**

**The Symbol of Precision and Reliability . . . . .**

To create a standard is difficult. To maintain the created standard is accomplishment. To steadily raise this standard to a higher level is something to be proud of.

Continental is justifiably proud that its trademark, a symbol of precision and reliability, typifies more than ever that Red Seal Engines are "America's Standard".

**Continental Motors Corporation**  
MUSKEGON, MICHIGAN

### New Weaver Equipment

New shop equipment recently offered by Weaver Mfg. Co., Springfield, Ill., includes the following items.

An electric tachometer operating from the primary ignition circuit. To operate, attach ground and distributor connections,



set switch on top to number of cylinders in engine and instrument reads r.p.m. direct on sapphire jeweled meter. Ideal for all engine tune-up tests.

A simple hub cap and grease cap remover that does the job efficiently replace-



ing the assortment of tools often used. Even a hammer for replacing inner cap is incorporated.

A knee action camber corrector designed for use with hydraulic jack. Corrects for slight bends in knuckle support



arm without disturbing brakes. Outfit includes corrector lever, jack base, two shims and two spacers. Fits most cars including late model Chevrolets.

(TURN TO PAGE 114, PLEASE!)

### QUIZ ANSWERS

(See Page 18)

1. a-c	6. a-d
2. a-c	7. b-c
3. b-c	8. a-d
4. b-d	9. b-d
5. b-c	10. a-d

AVIATION TYPE  
**HIGH PERFORMANCE**  
 SELF EMULSIFYING DEGREASING SOLVENT



Brush or spray Gunk on fuselage motor block, truck chassis or garage floor until oil and dirt is "wetted out". Rinse by sluicing with a water hose.

## CLEANS TRUCK CHASSIS TOO!

Make your own carburetor and fuel pump cold tank cleaning solvent from GUNK P-96 CONCENTRATE. So good we simply have to offer GUNK users a Free Formula Bulletin. Cost of a special bath as low as 30c a gallon.



Send for "Safety" specification sheet, literature and name of nearest jobber.

The CURRAN CORP.  
MALDEN

HEADQUARTERS  
for SELF  
EMULSIFYING  
DEGREASING  
SOLVENT

MFG. CHEMISTS  
MASS.

## NEW PRODUCTS

(CONTINUED FROM PAGE 112)

### Synthetic Tube, Cover on Hose

A new hose known as Type 76 SS, an addition to its line of tank car and tank truck hose for handling gasoline and oils, is now available from the B. F. Goodrich Co., Akron, Ohio. Of light, flexible construction, the new hose has tube and cover made from synthetic rubber, three plies of braided cotton yarn and built-in static wire. The hose is made in 1½, 2, 2½ and 3 in. sizes.

**A new 2-ton c.o.e. model has joined the Dodge line. Its 241.5 cu. in. engine delivers 99 hp. at 3000 r.p.m.**



### MORE RECAPS

The heavy, rugged Pennsylvania Carcass permits more recaps. Recap before visible non-skid disappears—saves Dual-Purpose valve protects carcass!

**YOU'LL GET MORE MILES  
WITH THIS  
TRUCK TIRE!**

**THE PENNSYLVANIA  
UNIVERSAL**

greatest advance in Truck Tire construction in a decade. The Dual Purpose Tread—the first tread that actually defeats heat—a tire that is virtually punishment-proof—a tire that gives countless added miles! Fleet owners, and truckers Coast to Coast have made amazing records with this tire—and so will you!

**PENNSYLVANIA RUBBER CO.  
JEANNETTE, PENNA.**

# PENNSYLVANIA TRUCK TIRES

*When writing to advertisers please mention Commercial Car Journal*

### K-D Glaseal Lights

Model 862 driving and passing lights incorporating the sealed beam unit have just been announced by the K-D Lamp Co., Cincinnati. Identified as K-D Glaseal units, they are designed to augment existing systems and may be connected



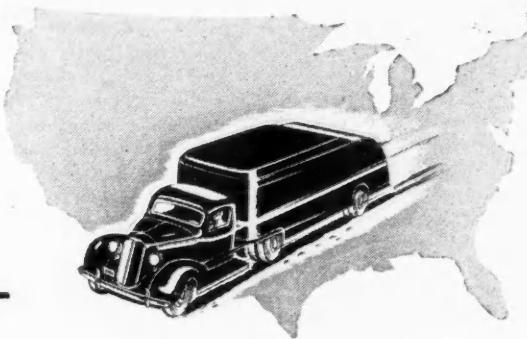
to driving and passing beam circuits of regular headlights. Bracket and clamps are malleable castings. Body is made of heavy-gage brass, chromium plated.

### Portable Bearing Flusher

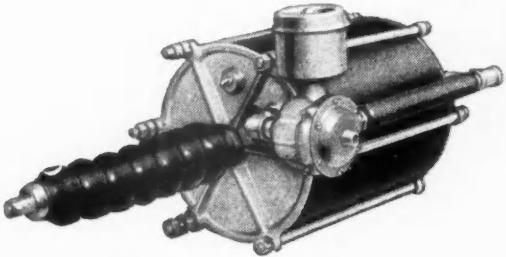
A portable pressure oil flusher and dispenser, known as the Port-O-Flush, is being marketed by J. A. Honegger 223 Spruce St., Bloomfield, N. J. The new device introduces oil into the bearing at 60 to 100 lb. per sq. in. pressure by means of air or gas pressure. It will handle oils of all viscosities from that of kerosene, for flushing out bearings and transmissions of all kinds prior to oiling, up to 600W transmission oil for gear reduction drives. It holds one quart of oil.

(MORE NEW PRODUCTS ON PAGE 128)

Wherever trucks travel—



# Nation-wide B-K Service safeguards



**This is why the majority of  
Power Braking installations  
are Bendix B-K**

- More than meets all state laws for trucks and trailers • Least weight added
- Fewest added parts • Low first cost—Practically no maintenance • Instant remote control • All emergency features of train operation • Quick, easy installation • Original brake system left intact • Fully controlled power application • A nation-wide service organization • Years of power braking experience and unapproached protection over future years of satisfying service.

## B-K Reliability

IT doesn't make any difference whether you're building trucks, selling trucks or operating trucks, the universal service and the universal good reputation of genuine Bendix B-K Power Braking are positively worth good profit dollars to you.

You want power braking on your trucks because it makes them better trucks . . . safer, easier to handle, more efficient. That being the case, you naturally want power braking that gives you *all* the advantages you're paying for.

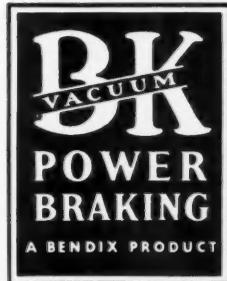
And *that* means genuine Bendix B-K Controlled Vacuum Power Braking. Not something else, but just that, because it's the *only* power braking that delivers everything you need.

*That's* why Bendix B-K Power Braking is the overwhelming first choice among power brake users; *that's* why it has such universal good reputation; *that's* why so many hundreds of competent, alert, service organizations the nation over and the world around are proud to display the familiar sign of Bendix B-K Service.

**BENDIX PRODUCTS DIVISION  
OF BENDIX AVIATION CORPORATION**  
401 Bendix Drive • South Bend, Indiana

# BENDIX

**Controlled Vacuum  
POWER BRAKING**



### Arc Welding Not So Tricky

"Arc welding has too many doctors," according to a statement made by J. F. Lincoln, president of the Lincoln Electric Co., Cleveland. "An operation which is natural, simple and easily accomplished, has largely been changed in the mind of the public to an art which takes on the mystery of voodooism with an admixture of the art of the medicine man."

"This opinion is groundless. The only thing that a welding operator can do is to hold the end of an electrode at a certain distance above the deposited metal and advance it along the seam to be welded."

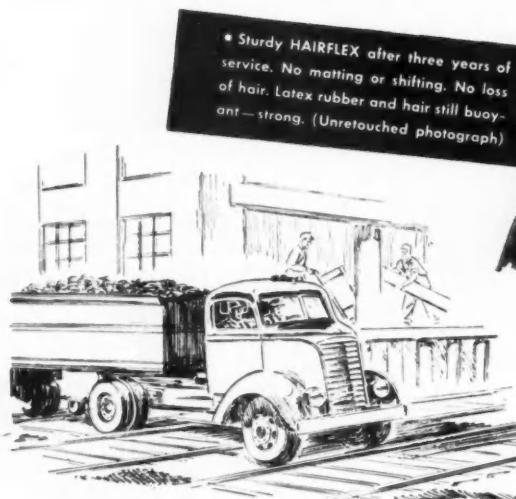
ed at a certain speed. As a matter of fact, with proper electrode, proper setting of the welding machine and proper preparation of the work, it is practically impossible to make a weld which will not stand up in service without having it so evident to the inspector that he would immediately reject it.

"It is time that we got away from trying to make this very simple operation mysterious. It is time we recognize that there has never been a failure on an insured pressure vessel made by the shielded arc process. It is time we recognize that failures in welds which are made by the methods recommended by

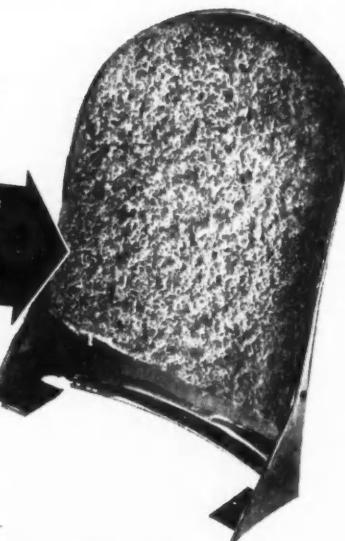
any reliable manufacturer never exist. It is time we recognize that there is no mystery in welding and that making a welded joint is far more simple than making a riveted joint. It is time we recognize that to spend time, money and attention in removing the least possible flaw from the deposited metal is silly in the light of the obvious flaws which must occur in the parent metal. A factor of safety is used to guard against these flaws that is more than is needed in any commercial weld."

"When we do recognize these facts we will have done two things: First, we will have given the green light to one of the most economical processes now known for the production of many structures; Secondly, we will have removed one of the fears which the uninitiated have developed regarding a perfectly normal operation."

## 6000 Hours of Punishing Service!\*



\*Sturdy HAIRFLEX after three years of service. No matting or shifting. No loss of hair. Latex rubber and hair still buoyant—strong. (Unretouched photograph)



\*Write today for name of fleet—for test showing relative coolness of HAIRFLEX compared to other new seat decking materials.

Bouncing, 5 days a week, 52 weeks a year, for three continuous years, in a heavy tractor. Pounding over railroad tracks and Belgian blocks—through ruts and holes—on the go more than 6000 hours with a 200-pound driver. And STILL THIS HAIRFLEX CUSHION HAS PLENTY OF LIFE! Years of wear remain!

Fleet Owners, this is what you want when you buy equipment. Long usable life. Service beyond the normal. You get this plus life when you buy HAIRFLEX.

HAIRFLEX CUSHIONS, having the comfort-giving qualities of luxurious curled hair and buoyant latex rubber will provide the maximum comfort for your drivers. These cushions, when

properly built, eliminate kidney trouble hazards and "shirt-tail rub"—eliminate much sick time. This factor is important where Workmen's Compensation laws are in effect.

HAIRFLEX is now standard equipment in General Motors Trucks and Ford DeLuxe Station Wagons. It is available in Fords as special equipment at extra cost in truck cabs. It is standard in another truck line—one of the most popular in the nation—and optional with a fourth manufacturer.

You can get Armour's HAIRFLEX in any truck you buy. Specify long-lasting, comfortable HAIRFLEX when you order your next trucks.

### One Gallon Makes Ten

Through the use of new synthetic alkyl-phenol components, Gunk development chemists have improved the regular Gunk, general purpose garage and chassis de-greasing concentrate for 1940. The new improved P-96 Gunk will be sold on the basis that one gallon of concentrate makes ten gallons of effective self-emulsifying de-greasing solvent when the concentrate is diluted with nine parts of light fuel oil distillate. In spite of the 60 per cent increase in concentration, no increase in price is contemplated.

### GuildTool Portable Sander

A portable electric sander, equipped with a 1/2 H.P. Universal motor and using standard 3 x 24 in. abrasive belts, is the newest item to be put out by the Syracuse Guild Tool Co., Syracuse, N. Y.



Type G-3, as it is known, has a belt speed of 1350 per minute and is equipped with precision ball bearings at all moving parts. It features a patented belt aligning control which insures proper traction regardless of the motion used. Another patented feature is its quick belt change latch. The complete unit weighs 15 lb.

### Auxiliary "Sealed Beam" Lamps

Two new auxiliary lamps, built on the "Sealed Beam" principle, are now available from the Casco Products Corp., Bridgeport, Conn. Known as Model 205 Driving Light and Model 205-A Passing Light, the new lamps are styled in the modern trend, and are designed to augment the road-lighting facilities of early as well as late models.

*Armour and Company  
Curled Hair Division  
1355 W. 31<sup>st</sup> STREET CHICAGO, ILLINOIS*

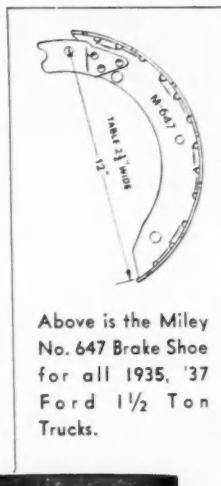


### **Linings that will take Today's overloads**

You in the operating and servicing end of automotive business know that today 80% of the popular 1½ ton trucks don't stop at 1½ ton loads. That they are carrying all but the very heaviest jobs and are carrying them faster than ever before . . . that commercial brakes today are stopping loads far above what they were designed for.

Under these conditions it's smart, economical and safest to line brakes with this high friction, fast stopping EBONITE Heavy Duty zinc wire resin impregnated brake lining. The high friction lining that steps up stopping and holding power. BLACK GOLD the densest, longest mileage and smoothest pedal lining yet developed is often used with it in combination for super performance.

Write for Catalog of Brake Linings, Brake Shoes (lined or unlined), Hydraulic Brake Parts, Clutch Facings and Plates, Riveting Machine, Rivets, etc.



Above is the Miley  
No. 647 Brake Shoe  
for all 1935, '37  
Ford 1½ Ton  
Trucks.

GOOD BRAKE LINING  
**L.J. MILEY CO.**  
CHICAGO . . . U.S.A.

1062 W. ADAMS ST., CHICAGO, U. S. A.

### **5-MAN BROCKWAY TRUCKS--EQUIPPED WITH ANTHONY Hydraulic HOISTS**



### **For Tough Mountain Work—**

ANOTHER example of how Anthony Low Loading Height Hydraulic Hoists are doing all kinds of tough jobs throughout the country. The City of Los Angeles Bureau of Water and Power bought special 5-man cab Brockway Trucks, Model No. 165-X, equipped with Anthony No. 722 Hydraulic Hoists, to work between Los Angeles and Boulder Dam.

The jobs were sold by the Brockway Pacific Truck Co. through Lambert Co. Ltd., Los Angeles, distributors. Mfg. by

**ANTHONY  
COMPANY**  
Streator, Illinois



## **Pierce Fly-ball Governors**



**Won't Slash  
into your  
ENGINE  
HORSE-  
POWER**

The difference in governor performance is the difference in the *swiftness* of movement of the Governor Valves, responsive to changes in engine (or vehicle) speed.

Thus, a slow moving Governor Valve begins to slash into the power of the motor long before the governed speed point is reached. The engine is starved of horsepower when power is needed.

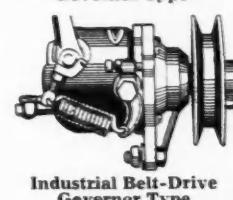
But there's no costly slash into engine horsepower when Pierce Zone Control Fly-ball Governors are used. For within the short space of 2 seconds, *slightly more than four ticks of a watch*, Pierce Zone Control Governor Valves move from a fully open to a fully closed position, and vice versa. (Less than 100 engine r.p.m.)

Pierce Governors have long been available for Industrial Engines, and for Automotive Engines that provided for an internal governor drive. But now they may be had for road speed control (transmission driven), or for engine speed regulation and control (distributor driven) for all makes and models of vehicles.

Moreover, with Pierce Governors there is less shifting of gears. High gear is used more frequently, and for longer intervals. Therefore, driving time between points is decreased. Fuel consumption is reduced. And pay-load income increased.

Ask your wholesaler for more facts, or write directly to:

**THE PIERCE GOVERNOR CO.  
ANDERSON, INDIANA, U.S.A.  
WORLD'S LARGEST GOVERNOR BUILDERS**



# BUTANE CARBURETION

## POWERFUL, ECONOMICAL ENGINE PERFORMANCE

**Butane, in combination with ENSIGN Carburetion Equipment, makes an ideal fuel for Trucks, Tractors, Buses and Stationary Engines. Engine operating expense is lowered and performance reaches new peaks.**

**ENSIGN Carburetion Equipment for Butane is the accepted standard from coast to coast. For the BEST in Butane Carburetion, always specify ENSIGN!**

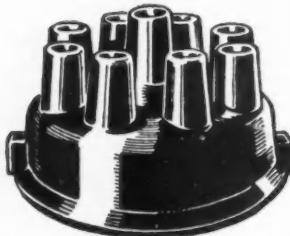
### FOR TRUCKS, TRACTORS, BUSES, STATIONARY ENGINES



Fleet operators know the value of ENSIGN Carburetion Equipment for Butane. The fleet of twenty-five trucks shown above is ENSIGN Butane-equipped.

Write us for complete information... Our competent engineering staff is at your service.

**ENSIGN CARBURETOR CO., LTD.**  
HUNTINGTON PARK, CALIF. • DALLAS, TEX. • CHICAGO, ILL.



#### Other PRODUCTS by TUNGSTEN

- Brushes
- Bushings
- Coils
- Condensers
- Cutouts
- Distributor Parts
- Gears
- Horn and Light Relays
- Magneto Parts
- Starter Parts
- Switches
- Voltage Regulators
- Miscellaneous Parts

### TUNGSTEN'S SUPER BAKELITE for *A Longer, More Efficient Service Life*

Fleet operators are particularly interested in SUPER BAKELITE . . . a special formula product offering distinct improvements over regular type bakelite. Its higher dielectric strength presents greater resistivity to high tension currents in distributor heads. Non-porous, it eliminates all moisture and condensation in distributor caps which occasion hard starting and loss of current. Its superior structure and hardness make it comparatively scratch-proof. The quality of SUPER BAKELITE is constantly checked in the laboratory by specialists in plastics to produce caps and rotors that will afford EXTRA service under adverse conditions. Where regular bakelite does the job well . . . SUPER BAKELITE does it better and longer.

*Write today for our catalog.*



**TUNGSTEN CONTACT MFG. CO.**  
NORTH BERGEN, NEW JERSEY

*When writing to advertisers please mention Commercial Car Journal*

### NEW PRODUCTS

(CONTINUED FROM PAGE 114)

#### Ace Padlock

A new Ace padlock made by the Chicago Lock Co., 2024 N. Racine Ave., Chicago, features a double action locking principle which positively grips both sides of the shackle. Built with a 7-pin tumbler cylinder, the lock has a hardened shell which prevents sawing through, also a hardened center which offers protection against drilling.



Ace padlocks may be keyed "all alike," so that the same key will open all of them, or they can be "master keyed," so that the locks on one truck could be opened with the driver's key, but his key would not open the lock on any other trucks. Any executive, however, could have a master key to open the lock on any truck.

#### 3rd Dimension Lettering

Zephyr 3rd Dimension lettering for firm names and trade-marks is the newest product of the Dura-Products Mfg. Co., Canton,



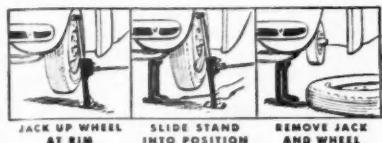
Ohio. Constructed of the finest grade of aluminum alloy one half inch thick, the lettering or trademark is mounted on a metal bar, enameled to match the truck. The bar is attached to the truck side with either flat head bolts or sheet metal screws. The entire piece is said to be tarnish and rust proof.

#### Welders Coupled in Series

By means of special connecting cables, the K. O. Lee & Son Co., Aberdeen, S. D., has made it possible to couple any two of its A. C. arc welders and attain the combined amperage output of both units. By using two 250 amperes welders, a combined welding capacity of 500 amperes is obtained, which will handle electrodes up to  $\frac{3}{8}$  in. dia. In addition to providing extra welding capacity, the coupling of the two units makes possible a greater choice of welding heats. The amperages of both welders are added together to determine the total amperage for the job and the load is divided between each unit, merely by plugging the selector cable of each individual welder in a heat tap of approximately one-half the total amperage required for the operation.

#### **New Jack Eases Tire Changes**

A new jack known as the Ajax Rim-Lift is now available from the Ajax Auto Parts Co., Racine, Wis. The jack operates on the outside flange of the wheel rim, a few short strokes being sufficient to raise the wheel high enough for tire changes. A stand is then slid under the brake drum or axle, supporting the load while the



wheel is off. The jack is available in two models, one with a stand designed to fit under the brake drum, the other with universal stand to fit under the axle or spring.

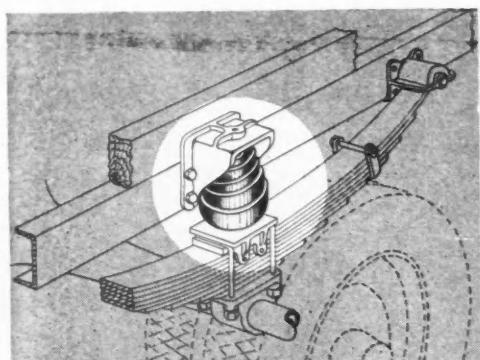
## New Kathanode Battery

A new 100 ampere hour battery featuring Kathanode construction is being offered by the Gould Storage Battery Co., Depew, New York. First introduced for use in large industrial batteries, Kathanode construction was adapted in 1936 for automotive purposes, and

was available only at premium prices. The new "100", however, is competitively priced, retailing at \$13.75 and carrying a twenty-seven months' guarantee.

## Boots Self-Locking Nuts

The Boots Self-Locking Nut is an effective one-piece, all metal nut designed to withstand the most severe vibration. It is essentially two nuts in one, with the top section displaced in a downward direction so that its upper (locking) threads are out of lead with respect to the load-carrying threads of the lower sections. The two sections are connected by a spring member which is an integral part of the nut. Upon the insertion of a bolt, the spring member allows the top section of the nut to be extended to permit it to engage properly with the threads of the bolt. A force is thus established which firmly grips the nut without damage to the threads of the screw or bolt and accommodates all thread variations.



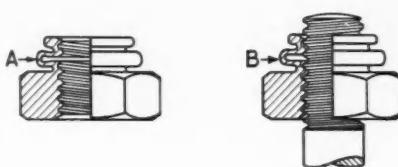
**Extra Payload without Penalty!**

With its unique cushioning action **BODY BUOY** floats the extra load without additional strain on the center bolts or U bolts of the main spring. There's no burdensome extra weight—pair of springs weigh less than 20 lbs.—yet capacity is greater than ordinary Helpers. Proven by thousands of vehicle owners. Installed with a few simple tools. Your Dealer has or can quickly secure Body Buoy for virtually any vehicle.

Write for Literature—stating make,  
year, body and capacity of Job.

#### **Magnetic Drain Plugs for Trucks**

Magnetized Drain Plugs, manufactured by the Lisle Corp., Clarinda, Iowa, are being made available to fleet owners for the first time. The operation of the plug depends on a permanent magnet, guaranteed to retain its magnetic attraction for 5 years, which attracts and holds abrasive metal particles that are constantly being formed in the crankcase, transmission and rear axle. Whenever the lubricant is checked or changed, the cluster of particles that have gathered on the magnet are wiped off and the plug screwed back in place. The Lisle Corp. has offered to send a set of three plugs for testing purposes to any fleet owner who would care to try them.



In the sketches above, "A" shows the Boots Self-Locking nut spring member in its displaced position when not engaged with a screw or bolt. "B" shows the position of the spring member when the nut is engaged. Both sketches are exaggerated. The nuts are available in sizes from No. 8 to  $\frac{3}{4}$  in., in a variety of metals. They are made by Scovil Mfg. Co., Waterbury, Conn.

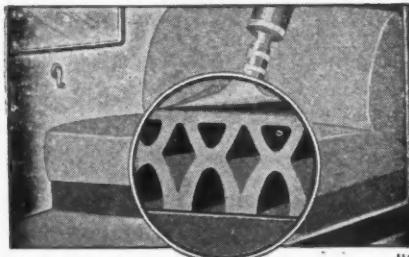


**BOBDICK STEEL PRODUCTS INC.**

**COMMERCIAL DIVISION**

**COMMERCIAL DIVISION**

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with Black Diamond All-Rubber  
SEAT CUSHIONS**



Truck operators who now use Black Diamond all-rubber seat cushions and back rests exclusively do not hesitate to say that they give longer wear, with no upkeep expense, than any other seat cushion they have ever known. There can be no question about their economy as exclusive diamond grid construction and quality materials assure the best at less cost. Cool and luxuriously comfortable. Will fit any size truck. Write today for details.

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**NEW SpeedWay 1/2" No. 89 DRILL**

Full size, full weight, full capacity. Specially wound, high torque 115 V Universal 500 r.p.m. SpeedWay Drill Motor. Forced air cooling, oilless bearings, new natural grip breast plate and removable side handles. Streamlined die cast case. If your dealer can't supply, order direct on 10 day trial.



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OFF THE HIGHWAY SERVICE**

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It Costs No More for Trucks Specially  
Built to Fit Your Needs. Have Our Engi-  
neers Visit and Analyze Your Operation.

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The unit offering . . .  
Economy  
Compactness  
Adaptability  
. . . in the most efficient type refrigeration  
on the market.

Write today for catalog.

**MOBILE REFRIGERATION, INC.**  
10 Rockefeller Plaza, New York City

**New Items from Thompson**

Two new items, designed for the simple and efficient cleaning out of automobile and truck cooling systems, have been announced by the Thompson Mfg. Co., Hammond, Ind.

The scale, rust and sludge is first either dissolved or loosened in the radiator and engine through the use of the new SuperFlush compound. After allowing the engine to idle for 45 to 60 minutes, the foreign matter is removed by the new SuperRadiator Flusher, using controlled hydraulic pressure.



The flushing unit has a 10 gallon tank supported on a channel iron frame, with an overall height of 48 in. It is equipped with control lever and a back pressure gage. It is furnished with 11 ft. of tank hose connection and nozzle with a set of hose adapters, including a special heater hose adapter.

The SuperFlush compound lists at \$0.75 per can, while the SuperRadiator Flusher lists at \$47.50.

**Streamlined King Testers**

The Electric Heat Control Co. of 9123 Inman Avenue, Cleveland, Ohio, announces the streamlined 600 series of testing units. These units have all the important mechanical features that have been embodied in the "King" line. The color is art blue synthetic enamel baked on with handle and trimming in chrome with a bright orange band. The instrument panel is orange. The reflector is made of chrome plate and has two tubular bulbs. Large rubber tire ball bearing swivel casters make it possible to move tester about easily and quietly.

For running-in-new and rebuilt engines use auxiliary lubricants containing "dag"® Brand colloidal graphite.

Acheson Colloids Corporation

Port Huron Michigan

\*REG. U. S. PAT. OFF.

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HYDRAULIC

**HOISTS & DUMP BODIES  
Every Size and Type  
for Every HAULING JOB**

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Branches and Distributors Everywhere

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The world's largest operators of commercial vehicles use Jones Portable Tachometers to check engine speeds for tune-ups, and setting governors, etc. Here are a few: Standard Oil Co., of La., N. J., N. Y.; Shell Petroleum Co., Atlantic Refining Company, Tidewater Oil Company, Keeshin Motor Express, Mack Trucks, Brockway, U. S. Navy.

Direct, instantaneous reading  
**JONES-MOTROLA-STAMFORD, CONN.**  
432 FAIRFIELD AVENUE

**FRINK  
SNO-PLOWS**

Both "V" TYPE and  
**ONE WAY BLADE TYPE**  
hand or power hydraulic control  
FOR ALL MOTOR TRUCKS  
FROM 1½ to 10 TONS

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DAVENPORT-BESLER CORP., DAVENPORT, IOWA  
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"FINGER TIP ECONOMY"  
with the  
**GAS MASTER**

A four-inlet, one outlet gasoline control valve, the GAS MASTER enables the operator to control fuel supply to engine constantly. Built entirely of brass, it mounts on dash panel and is guaranteed for life of truck. Simple to operate . . . easy to install.



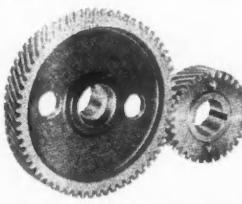
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Oak and Harrison Sts. Michigan City, Ind.

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performance in the  
Automotive Industry



**GRAMM TRAILERS**  
"Ask the man who pulls one"  
**P Series Timken Power Brakes**  
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**NOC-OUT**  
HOSE CLAMPS

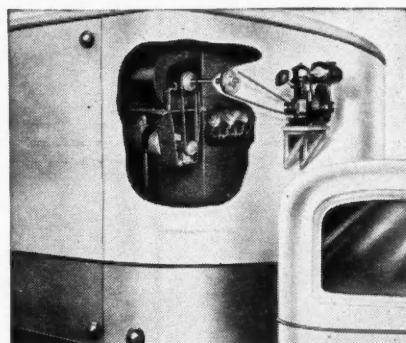
TRADE MARK  
THE HOSE CLAMP WITH  
THE THUMB SCREW

Use Noc-Out Hose Clamps . . . the standard of the automotive industry for quick tightening, perfect all-around seal on your hose connections. They have the extra margin of strength which makes them the leading automotive hose clamp. Type "A" Adjustable — will fit many hose sizes. Type GBB, solid band, heavy duty clamp for Booster Brakes.

**WITTEK MFG. CO.**  
4305 W. 24th PL., CHICAGO, U.S.A.

**Heavy-Duty Clutch Plate**

For truck service and other clutch applications subject to severe usage due to heavy loads or excessive stop-and-go driving, Monmouth Products Co., Cleveland, Ohio, has introduced a new heavy-duty flexible center drive plate. Unusual heat-resistance and stability of friction are claimed for the new plate which features "Metallix" facings, manufactured by a patented process in which carefully proportioned metals in powdered form are molded under heat and pressure into a dense, inseparable material upon an asbestos base. Not only is the new facing more resistant to the effects of heat, but it also is said to dissipate heat with such rapidity that it does not reach damaging high temperatures.

**QUICK PRE-COOLING**

40° in 1 Hour . . \*

30° in 2 Hours . .

24° in 3½ Hours!

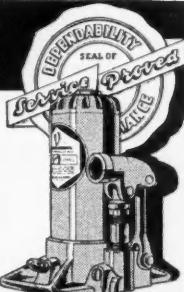
Write us for facts on the "extra" refrigeration protection afforded by . . .

**THE D & G SPRAY TYPE**

\*Photostat of recording thermometer chart of this test sent on request.

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**SERVICE-  
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GRUELING years of toughest service prove Blackhawk Hydraulics superior in safety, rugged dependability and utility. "Service - Proved" Seal found only on Blackhawks. Only complete line of hydraulic hand jacks — 20 models—1 to 75 tons capacity.

**BLACKHAWK MFG. CO.**  
Dept. J1160, Milwaukee, Wis.

**BLACKHAWK**

**THE NUT** that is reducing maintenance costs for many of the best managed truck and bus fleets . . .

**• Write for Catalog**

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**Elastic Stop SELF-LOCKING NUTS****NEW MEEHANITE**  
HEAVY-DUTY  
TRAILER BRAKE DRUM

Designed to resist wear and dissipate heat. Smooth-finish . . . non-galling.

Developed by Meehanite Research Institute, Pittsburgh, Pa., in co-operation with General Foundry & Manufacturing Co., Flint, Mich.

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Great fleets of Armour delivery trucks carry Armour Star meat products to dealers everywhere. To keep them at peak performance demands the most modern maintenance methods, thorough knowledge of the basic engine conditions causing power loss and high operating costs.

Armour maintenance experts make a practice of checking engine bearings regularly to protect performance, because their wide experience has shown that worn cam, con rod and main bearings are a major cause of costly oil pumping.



**DON'T GUESS at the  
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When cam, con rod and main bearings are worn beyond normal clearances, they permit excess oil to enter piston assemblies, to foul pistons, rings and spark plugs. To restore power, pep and economy, replace in sets with Federal-Mogul Oil-Control Bearings.

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*Dependable*  
**DIESELS**

*First Choice*  
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... and have been for 7 years

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\* \* \*

*Remember—The Cummins Diesel is DIFFERENT from all other diesels. Ask your Cummins Dealer why this difference is responsible for Cummins' unusual record. Cummins Engine Company, 1016 Wilson Street, Columbus, Indiana.*

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**QUICKLY  
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**EASY  
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... for low-cost battery mileage. Now, it is simple and inexpensive to keep batteries at efficient charge to prolong battery life. The Valley Guaranteed (two years) Charger connects to lighting circuit—is easy and economical to operate—no moving parts. Write for FREE bulletin, today.

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**CUTS FUEL COST**

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Grand Rapids, Michigan

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Maintenance Costs**  
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Michigan City, Ind.

**MICHIANA**  
DUO-FLO  
**FILTERS**  
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### **Ahlberg Heavy-Duty Packer**

The need for a fast, positive lubrication of large size bearings is met by the packer illustrated. It thoroughly lubricates a large bearing in one easy operation and, at the



same time, conserves grease. The unit is unconditionally guaranteed for one year, and should last indefinitely. Built to take bearings from 1½ in. to 7 in. inside diameter. It is distributed exclusively by Ahlberg Bearing Co., Chicago.

### **Quick Heat Soldering Iron**

Through the use of a special carbon electrode which concentrates heat at the point of tip, a new soldering iron just announced by the Ideal Commutator Dresser Co., 3051 Park Ave., Sycamore, Ill., is claimed to reach soldering heat in less than one minute. Heating is controlled by a thumb-operated button on the handle and continues as long as the button is held down. Small and light in weight, the new iron is recommended for all ordinary soldering purposes. Complete assembly includes transformer, soldering iron and leads.

### **Buzzer Warns of Set Emergency**

The Ellery Co., 721 East Exchange St., Akron, Ohio, has introduced an emergency brake alarm. The new device sounds an audible buzz indicating that the emergency brake is set, in case the driver forgets to release it. The alarm will only sound when the ignition is on.

**NEW, Improved  
BALDOR GRINDER!  
at a LOWER PRICE.**

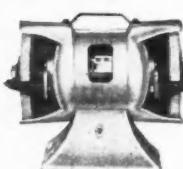
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THE ACCEPTED STANDARD

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Also Doors for Buildings

**ALL METAL**

... Coils like a window shade, out of the way . . . . .

**CONVENIENT  
BURGLAR PROOF  
FIRE PROOF  
MORE DURABLE**

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The KINNEAR  
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Factories: San Francisco, Cal. and Columbus, Ohio



### **OSHKOSH**

### **4 Wheel Drive Trucks**

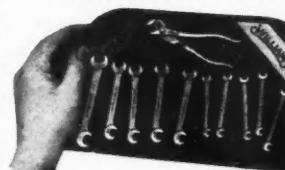
**A proven product. 1½ to 10 ton capacity. Write for complete information.**

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Oshkosh, Wis.

**WILLIAMS MIDGET  
"SUPERRENCH" ELECTRICAL  
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A handy assortment of 10 Midget "Superrenches" and "Superplier." Ask your jobber.

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"The Wrench People"  
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**COVER 70% OF ALL  
MAKES OF TRUCKS  
AND BUSES ARE  
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HEAVY DUTY PISTONS

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Over 50 Models of  
**AUTOCAR**  
TRUCKS  
assure a standard unit exactly suited to your need.  
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Announces a Sensational CARTRIDGE  
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**KINGHAM TRAILER CO.**  
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LOUISVILLE KY  
"A load behind is a trip ahead"

MILES OF SMILES  
ON  
**TIMKEN BEARINGS**

FOR —  
AUTOMOBILES  
TRUCKS  
TRAILERS  
AND  
BUSES

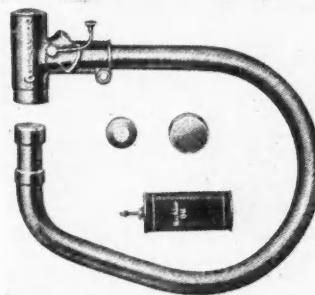
★  
THE TIMKEN ROLLER BEARING CO.  
CANTON, OHIO

# KATHANODE

THE DOUBLE LIFE BATTERY . . .

### Hammer Has Floating Dolly

A fully pneumatic body and fender hammer is the latest product of the Cornwell Quality Tools Co., Mogadore, Ohio. It features an air-cushioned dolly, which is said to evenly distribute the effect of the 10,000 blows-per-minute speed of the hammer. The



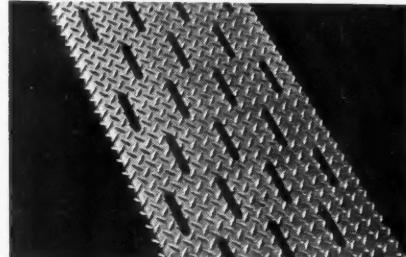
unit has a job clearance of 1½ in. and is self-adjusting by air when in operation. Change of frames is easily accomplished. The hammer complete weighs 9½ lb.

### Teleoptic Signal Light

A new style flush type directional signal light has been announced by The Teleoptic Company, Racine, Wis. This light is designed with its face at a slight angle from the body of the truck so that the signal is aimed at the most effective areas. The light is guaranteed for one year.

### "A.W." Diamond Running Boards

Illustrated is a section of the new "A.W." slotted-type Super-Diamond steel running boards developed by the Alan Wood Steel Co., Conshohocken, Pa. Made from solid



steel plate, the possibilities of corrosion are minimized and the arrangement of slots insures additional protection against dangerous falling accidents.

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Order and Sell

### CARTER PARTS

by the Package

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2820-56 North Spring Ave., St. Louis, Mo.



### —More Profits per Job with HEIL Bodies and Hoists

Safe — dependable — complete line for all types of service. Ask for free catalog.

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Hoists — Bodies — Tanks — Road Scrapers — Snow Plows  
Bottle Washers — Dehydrators — Oil Burners — Water Systems



**GLOBE-UNION INC., MILWAUKEE, WIS.**

For PROVED PERFORMANCE in

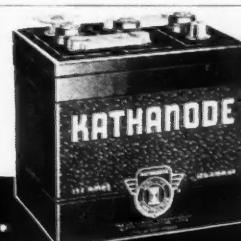
### TRUCK REFRIGERATION

install BAKER equipment

**BAKER ICE MACHINE COMPANY, INC.**

1575 Evans St.

Omaha, Nebr.



All truck and bus operators can cut maintenance costs with the original Spun Glass battery that's guaranteed longer. Kathanode Corp., Chicago.

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This Advertisers' Index is published as a convenience, and not as a part of the advertising contract. Every care will be taken to index correctly. No allowance will be made for errors or failure to insert.

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Dodge Div. of Chrysler Corp.	2nd Cover
Dole Valve Co.	3
Do-Ray Lamp Co.	84
Dromgold & Glenn	131
Dry-Zero Corp.	120
Du Pont de Nemours & Co., E. I., Inc., Fabrikoid Division	15
Du Pont de Nemours & Co., Inc., Refinish Sales	90



Eberhard Mfg. Co. (Div. of the Eastern Malleable Iron Co.)	63
Edison-Splitdorf Corp.	75
Edwards Iron Works	74
Elastic Stop Nut Corp.	131
Electric Storage Battery Co.	39
Ensign Carburetor Co., Ltd.	128
Ethyl Gasoline Corp.	59
Exide Batteries	39
Federal-Mogul Corp.	132
Federal Motor Truck Co.	41
Ferodo and Asbestos, Inc.	88
Fitzgerald Mfg. Co.	1
Ford Motor Co.	105
Four Wheel Drive Auto Co.	Back Cover
Frink, Carl H., Inc.	130
Fruehauf Trailer Co.	95
Fuller Mfg. Co.	78
Gar Wood Industries, Inc.	130
Gatke Corp.	96
General Filters, Inc.	137
General Fire Truck Corp., The	92
General Tire & Rubber Co.	47
Globe-Union, Inc.	137
Goodrich Co., The B. F.	140
Goodyear Tire & Rubber Co.	8
Gramm Trailer Div. Gramm Motor Truck Corp.	131
Great Lakes Steel Corp.	97
Hall Mfg. Co.	69
Hansen Mfg. Co., A. L.	44
Heil Co., The	137
Hein-Werner Motor Parts Corp.	87
Hercules Motors Corp.	79
Highway Equipment, Inc.	130
Highway Trailer Co.	126
Holland Hitch Co.	123
Homestead Valve Mfg. Co.	94
Hoof Products Co.	62
International Harvester Co., Inc.	16
Jones-Motrola	130
K-D Lamp Co.	116
Karpex Mfg. Co.	130
Kathode Corp.	137
Kellogg Div. of the American Brake Shoe & Foundry Co.	98
Kester Solder Co.	116
Kingham Trailer Co.	137
King-Seeley Corp.	70
Kinnear Mfg. Co.	136
Lubri-Zol Corp.	43
McQuay-Norris Mfg. Co.	14
Mack Trucks, Inc.	119
Marmont-Herrington, Inc.	58
Meehanite Research Institute	131
Michiana Products Corp.	136
Midland Steel Products Co.	108

Miley Co., L. J.	127
Mobile Refrigeration, Inc.	130
Monmouth Products Co.	104
Nagle Equipment Corp. Ted.	106
National Tube Co.	61
Oshkosh Motor Trucks, Inc.	136
Oxylator Co.	136
Packard Electric Div. General Motors Corp.	71
Parish Pressed Steel Co.	117-139
Pennsylvania Rubber Co.	114
Pierce Governor Co., The	127
Rapids Products Co., Inc.	136
Raybestos Div. of Raybestos-Manhattan, Inc.	93
Reclaimo Mfg. Co.	131
Reo Motor Car Co.	Front Cover
Republic Steel Corp.	89
Rotawasher Corp., The	123
S K F Industries, Inc.	130
Safety Speed Control Co.	126
Salisbury Axle Co.	139
Scull Signal Co.	124
Sealed Power Corp.	67
Service Recorder Co.	46
Sherwin-Williams Co.	99
Shuler-Axle Co., Inc.	111
Simplex Products Corp.	60
Snap-On Tools Corp.	125
Socony-Vacuum Oil Co., Inc.	72-73
Speedway Mfg. Co.	130
Spicer Mfg. Corp.	139
Standard Oil Co. (Indiana)	11
Sterling Motors Corp.	125
Stewart-Warner Corp.	100
Stuart Oil Co., D. A.	126
Tennessee Coal, Iron & Railroad Co.	61
Texas Co., The	4-5
Thompson Products, Inc.	101
Thornton Tandem Co.	80
Timken-Detroit Axle Co.	82
Timken Roller Bearing Co.	81-137
Toledo Steel Products Co.	83
Trailer Company of America	109
Trucktor Corp.	102
Tungsten Contact Mfg. Co.	128
United States Asbestos Div. of Raybestos - Manhattan, Inc.	76-77
United States Steel Corp.	61
Valley Electric Co.	136
Victor Mfg. & Gasket Co.	129
Wagner Electric Corp.	126
Walter Motor Truck Co.	63
Watkins Babbittting Service	132
Waukesha Motor Co.	2
White Motor Co.	10
Whitehead Stamping Co.	126
Williams & Co., J. H.	136
Willys-Overland Motors, Inc.	115
Wittek Mfg. Co.	131
Zollner Machine Works	136